ATTACHMENT 7

SONOS

May 19, 2023

Issues for the Jury

1. Are the asserted claims of the '885 and '966 patents infringed?

2. Are those claims valid?

3. What are the damages?

PDX10.2

Infringement

Infringement of '885 Patent, Claim 1 - Prior Versions

[1.0] A first zone player comprising: ✔

[1.1] a network interface that is configured to communicatively couple the first zone player to at least one data network; ✔

[1.2] one or more processors; ✔

[1.3] a non-transitory computer-readable medium; and ✔

[1.4] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising: ✔

[1.5] while operating in a standalone mode in which the first zone player is configured to playback media individually in a networked media playback system comprising the first zone player and at least one other zone players: ✔

[1.6] (i) receiving, from a network device over a data network, first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; and ✔

[1.7] (ii) receiving, from the network device over the data network, second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player; ✔

[1.8] after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation; ✔

[1.9] after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players; and ✔

[1.10] based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players. ✔

INFRINGED

Sonos Patents

Player
Patent

Controller
Patent

PDX10.5

Google Opening Statement: No Storage

Google Opening Statement

Google

"Is it operating in standalone mode? **Does it cause storage?** **If the answers** to any one of those questions in the claims **is no**, you don't pass the test. **There is no infringement**."

...

"And you will hear about the technology that Google developed which does **not** require the accused zone groups to be **stored in a persistent manner**."

Trial Transcript at 230:05-22

PDX10.6

Mr. MacKay: Static Groups are Stored

Kenneth MacKay
Senior Staff
Software Engineer

Google

Q. You agree that a speaker group is something that is saved by a user in advance of being launched?

A. Well, again, the -- the group might never be launched. Like you might never cast to the group. So it's -- I would characterize it as – a static group is something that the user configures and it's saved persistently.

Trial Transcript at 789:3-10

PDX10.7

Google Static Groups Are Stored
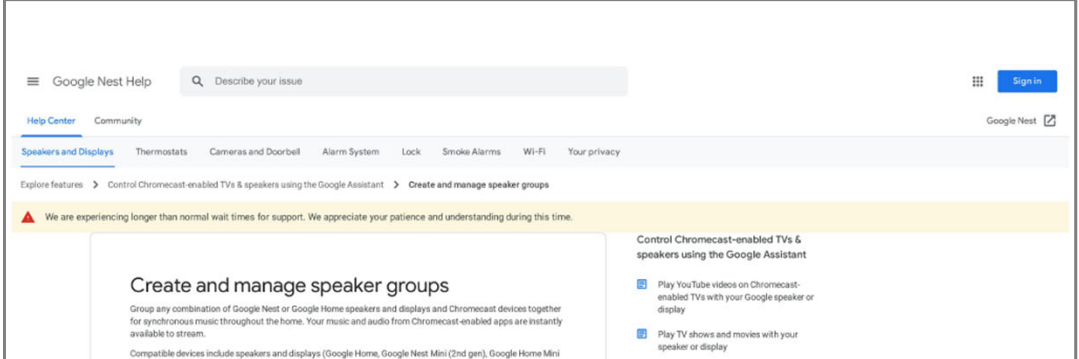
Step 1. Create and manage speaker groups

Create an audio group

1. Make sure your mobile device or tablet is connected to the same Wi-Fi or linked to the same account as your Chromecast, or speaker or display.
2. Open the Google Home app 🏠.
3. At the top left, tap Add ➕ > **Create speaker group**.
4. Tap each device you want to add to the group. A check ✓ will appear next to each device you select.
5. Tap **Next** > Enter a name for your group > Save.

Save.

PDX10.8
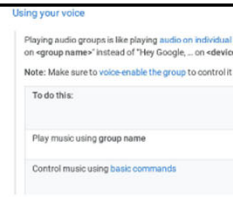
Google Static Groups Are Stored
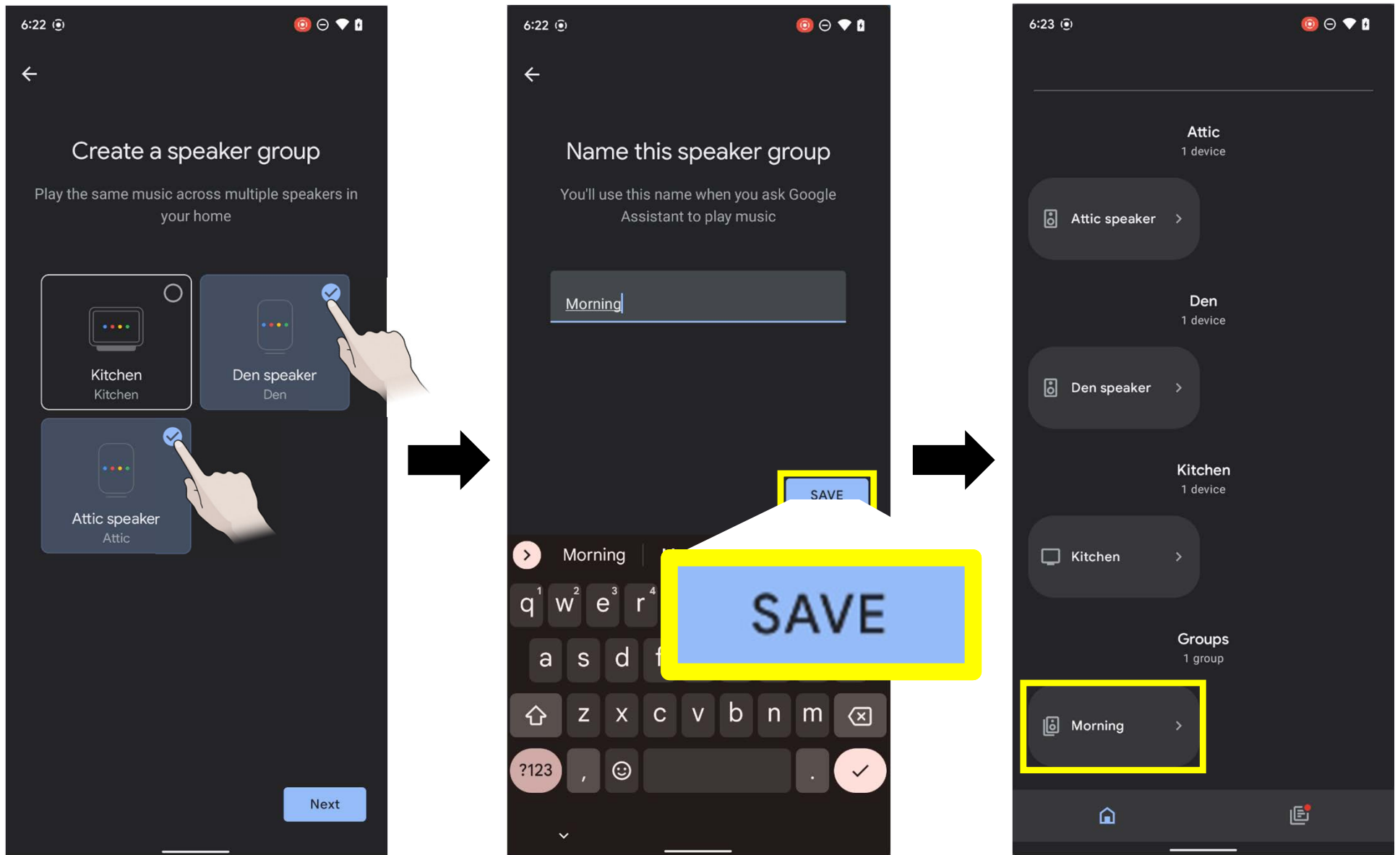
Dr. Almeroth: Google Static Groups Are Stored

Dr. Almeroth

Technical Expert

UC SANTA BARBARA
engineering

Q.   And based on the evidence you've seen regarding the system operation, does what Google's products do meet that [storage] requirement?

A.   Yes, absolutely.

***

A.   Yes. It says right here in this document (as read): "The **group configuration** is updated and **stored in the prefs file on the device**." … The information about the group is stored on the players, and so that would be sufficient to meet the requirements of the claim.

Google

Setup

Some CastV2 commands have been added to allow the Google Cast app to configure groups. Whenever one of the commands arrives, the group configuration is updated and stored in the prefs file on the device. The change is also sent to the MultizoneManager.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX6453

3:20-cv-06754-WHA

Trial Transcript at 787:23-788:13

PDX10.10

Infringement of '966 Patent, Claim 1 - Prior Versions

[1.0] A computing device comprising: ✓

[1.1] one or more processors; ✓

[1.2] a non-transitory computer-readable medium; and; ✓

[1.3] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising: ✓

[1.4] while serving as a controller for a networked media playback system comprising a first zone player and at least two other zone players, wherein the first zone player is operating in a standalone mode in which the first zone player is configured to play back media individually: ✓

[1.5] receiving a first request to create a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; ✓

[1.6] based on the first request, i) causing creation of the first zone scene, including an indication of the first zone scene to be transmitted to the first zone player, and ii) causing storage of the first zone scene; ✓

[1.7] receiving a second request to create a second zone scene comprising a second predefined grouping of zone players including at least a third zone player that is to be configured for synchronous playback of media when the second zone scene is invoked, wherein the third zone player is different than the second zone player; ✓

[1.8] based on the second request, i) causing creation of the second zone scene, ii) causing an indication of the second zone scene to be transmitted to the first zone player, and iii) causing storage of the second zone scene; ✓

[1.9] displaying a representation of the first zone scene and a representation of the second zone scene; and ✓

[1.10] while displaying the representation of the first zone scene and the representation of the second zone scene, receiving a third request to invoke the first zone scene; and ✓

[1.11] based on the third request, causing the first zone player to transition from operating in the standalone mode to operating in accordance with the first predefined grouping of zone players such that the first zone player is configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player. ✓

INFRINGED

PDX10.11

Redesign Did Not Alter Google Home App

Asserted Claims	Accused Google Products	Version	Google Infringe?
'966 Patent Claims 1, 2, 4, 6, 8	Google Home + Representative Computing Devices (Google Pixel Phones, Google Pixel Tablets, Google Pixelbooks, Apple, Samsung, Motorola, OnePlus, Lenovo, HP, Acer, Asus) — Google	**Prior Versions** (Nov. 2020 – Present)	✔
'966 Patent Claims 1, 2, 4, 6, 8	Google Home + Representative Computing Devices (Google Pixel Phones, Google Pixel Tablets, Google Pixelbooks, Apple, Samsung, Motorola, OnePlus, Lenovo, HP, Acer, Asus) — Google	**New Version** (Dec. 2022 – Present)	✔

PDX10.12

<u>No</u> Changes to Google Home App on Controller

Kenneth MacKay
Senior Staff
Software Engineer

Google

Q.   And so you added the StopCurrentApp function to Google's audio players, but you did **not** make any changes to the Google Home app that runs on the controller; correct?

A.   That's **correct**.

PDX10.13

Infringement of '966 Patent, Claim 1 - New Versions

[1.0] A computing device comprising: ✓

[1.1] one or more processors; ✓

[1.2] a non-transitory computer-readable medium; and; ✓

[1.3] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising: ✓

[1.4] while serving as a controller for a networked media playback system comprising a first zone player and at least two other zone players, wherein the first zone player is operating in a standalone mode in which the first zone player is configured to play back media individually: ✓

[1.5] receiving a first request to create a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; ✓

[1.6] based on the first request, i) causing creation of the first zone scene, ii) causing an indication of the first zone scene to be transmitted to the first zone player, and iii) causing storage of the first zone scene; ✓

[1.7] receiving a second request to create a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the third zone player is different than the second zone player; ✓

[1.8] based on the second request, i) causing creation of the second zone scene, ii) causing an indication of the second zone scene to be transmitted to the first zone player, and iii) causing storage of the second zone scene; ✓

[1.9] displaying a representation of the first zone scene and a representation of the second zone scene; and ✓

[1.10] while displaying the representation of the first zone scene and the representation of the second zone scene, receiving a third request to invoke the first zone scene; and ✓

[1.11] based on the third request, causing the first zone player to transition from operating in the standalone mode to operating in accordance with the first predefined grouping of zone players such that the first zone player is configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player. ✓

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TX0001
3:20-cv-06754-WHA

PDX10.14

Google Opening Statement: No Standalone Mode

Google Opening Statement

Google

"**Is it operating in standalone mode?** Does it cause storage? **If the answers** to any one of those questions in the claims **is no**, you don't pass the test. **There is no infringement**."

...

"[O]n the new design, as you saw and the evidence will prove, one of the answers to the question is **no, while operating in standalone mode**."

Trial Transcript at 230:05-22

PDX10.15

Google Opening Statement: No Standalone Mode

Google Opening Statement

Google

"What these claims all require is that this speaker that you are adding to these other groups must be **actively** operating in standalone mode, **playing music** individually."

Trial Transcript at 225:1-4

PDX10.16

Standalone Mode Does <u>Not</u> Require Playing Music

Dr. Schonfeld

Google's Technical Expert

Q. In order to meet the **standalone mode**, does the zone player **have to be playing audio?**

A. **That's not my understanding**.

08/31/2022 Schonfeld Dep. Tr. at 49:12-16;
Schonfeld Trial Testimony at 1462:4-6

PDX10.17

Standalone Mode Does <u>Not</u> Require Playing Music

Dr. Schonfeld

Google's Technical Expert

Google

Q. What does it mean for a player to be configured to play back audio individually?

A. That it is **not configured to play as part of the group** ….

08/31/2022 Schonfeld Dep. Tr. at 51:4-8;
Schonfeld Trial Testimony at 1462:17-19

PDX10.18

Standalone Mode Does <u>Not</u> Require Playing Music

Christopher Bakewell

Damages Expert

Google

HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

"Claim 1 also requires speaker 1 to stay in a "standalone mode" even after being added to the two speaker groups. In other words, I understand that speaker 1 will continue to act as an individual speaker (i.e., either playing music or not playing music) despite being grouped together with speakers 2 and 3."

Respectfully Submitted,

W. Christopher Bakewell

01-13-2023 Bakewell Rebuttal Report at para. 85;
Bakewell Trial Testimony at 1583:19-24

PDX10.19

Standalone Mode Does <u>Not</u> Require Playing Music

Christopher Bakewell

Damages Expert

Google

Q. Is it your understanding that standalone mode does not require playing music?

A. Does not require playing music? So this comes from Dr. Schonfeld, so my understanding, I think that's part of what you are implying with your question, but it says the opposite here; "i.e., **either play music or not playing music**."

01/31/2023 Bakewell Dep. Tr. at 99:20-100:2;
Bakewell Trial Testimony at 1584:10-16

PDX10.20

New Google Players Continue In Standalone Mode

Standalone Mode
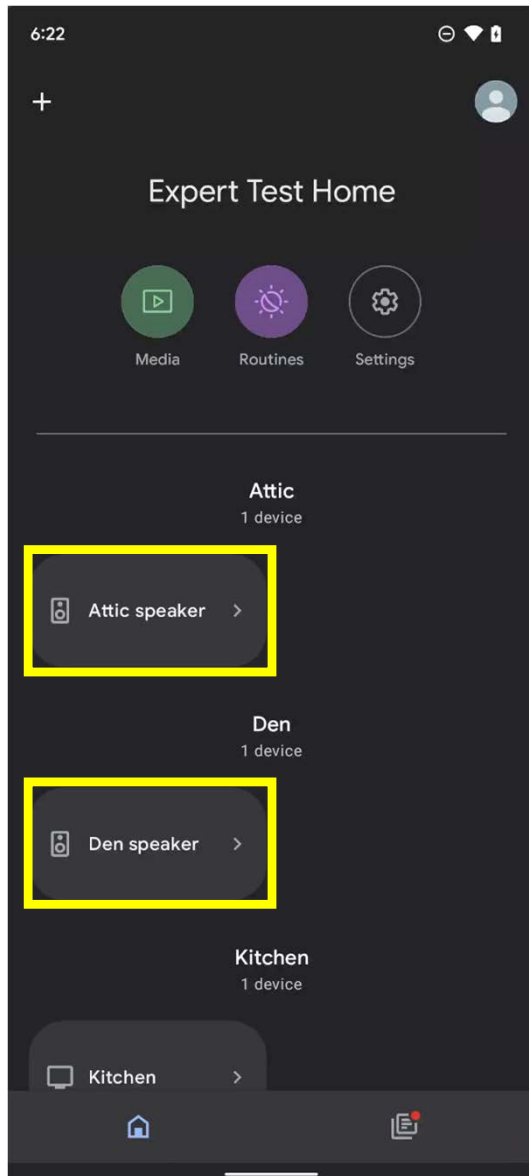
Group Creation

Standalone Mode

PDX10.21
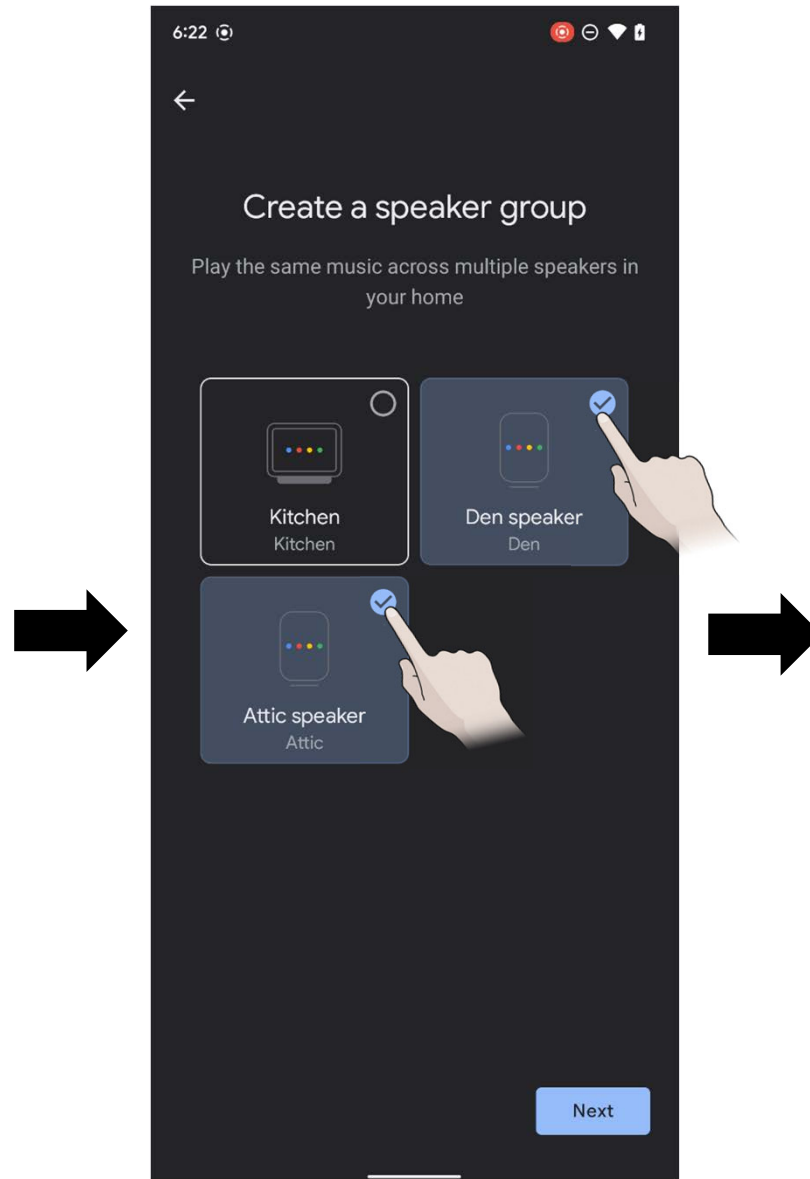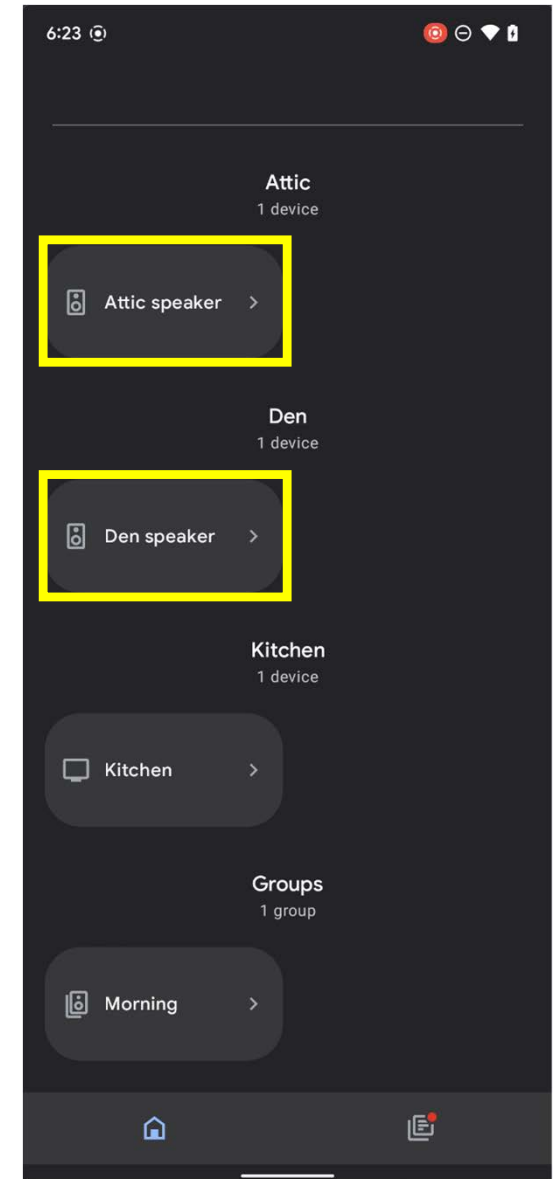
New Google Players Continue In Standalone Mode

Kenneth MacKay
Senior Staff
Software Engineer

Q.   Right. It's not going to -- the **StopCurrentApp()** function in this case is **not going to cause any change to -- to the operational behavior of the player; correct?**

A.   **Yes**.

Trial Transcript at 1287:16-19;
01/25/2023; Mackay Dep Tr at 55:19-24

PDX10.22

Dr. Almeroth's Infringement Analysis
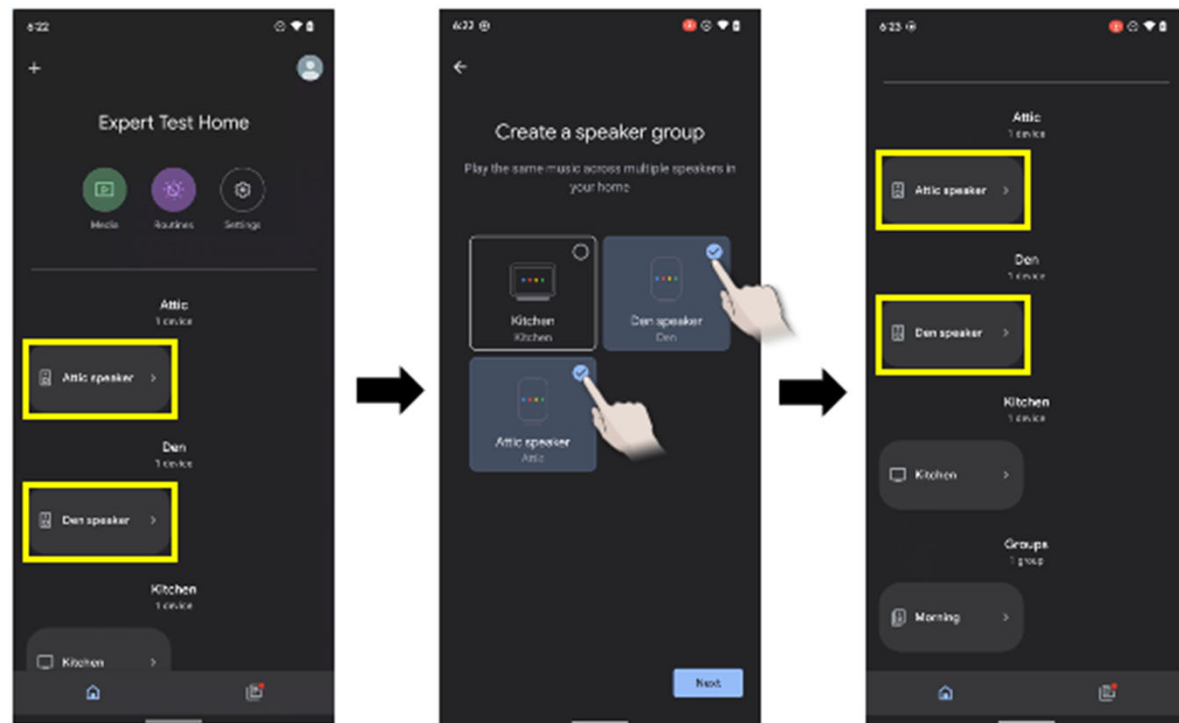
Dr. Almeroth

Technical Expert

UC SANTA BARBARA
engineering

Q. And based on your evaluation, what is your opinion as to whether these standalone mode limitations are still met by the new version?

A. Yes. And this is very important. Google ties playing music and hearing audio to being in standalone mode or not. . . . But the reality is the claim talks about two modes: you're either in group mode where you're synchronized to play in group mode or you're not, you're in standalone mode. **So the fact that you stop playing audio as part of group creation does not take that speaker out of standalone mode.** It just stops the ability to hear audio of what's already playing.

Trial Transcript at 802:13-25

PDX10.23

New Google Players Infringe '966 Patent

'885 Claim 1

1. **[1.0]** A first zone player comprising: ... **[1.4]** program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising:

[1.5] while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players:

> **[1.6]** (i) receiving, from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; and

> **[1.7]** (ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player;

[1.8] after receiving the first and second indications, **continuing to operate in the standalone mode** until a given one of the first and second zone scenes has been selected for invocation;

[1.9] after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players; and

[1.10] based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players.

'966 Claim 1

1. **[1.0]** A computing device comprising: ... **[1.3]** program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising:

[1.4] while serving as a controller for a networked media playback system comprising a first zone player and at least two other zone players, wherein the first zone player is operating in a standalone mode in which the first zone player is configured to play back media individually:

> **[1.5]** receiving a first request to create a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked;

> **[1.6]** based on the first request, i) causing creation of the first zone scene, ii) causing an indication of the first zone scene to be transmitted to the first zone player, and iii) causing storage of the first zone scene;

> **[1.7]** receiving a second request to create a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the third zone player is different than the second zone player;

> **[1.8]** based on the second request, i) causing creation of the second zone scene, ii) causing an indication of the second zone scene to be transmitted to the first zone player, and iii) causing storage of the second zone scene;

> **[1.9]** displaying a representation of the first zone scene and a representation of the second zone scene; and

> **[1.10]** while displaying the representation of the first zone scene and the representation of the second zone scene, receiving a third request to invoke the first zone scene; and

[1.11] based on the third request, causing the first zone player to transition from operating in the standalone mode to operating in accordance with the first predefined grouping of zone players such that the first zone player is configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player.

No Continuous Standalone Mode Requirement

Dr. Almeroth

Technical Expert

UC SANTA BARBARA engineering

Q. Are there any differences between [the '885 and '966] claims that we should be aware of?

A. …The second difference here is…the '885 patent had a requirement…where the zone player has to continue to operate in the standalone mode until a given one of the first [] zone scenes has been selected…[G]o[ing] forward to the '966 patent, **that's not a limitation in this patent.** What it does say is that while it's operating in standalone mode, it has to do each of these additional limitations. **It doesn't say it has to continuously operate in standalone mode.**

Trial Transcript at 695:25-696:14

PDX10.25

No Continuous Standalone Mode Requirement

Dr. Almeroth

Technical Expert

UC SANTA BARBARA
engineering

Q. Do you consider that to be a requirement of these claims [of the '966 patnt]?

A. **No**. If you go back to the '885 patent, there is a limitation here that requires continuing to operate in standalone mode, but that "continuing to operate in standalone mode" language does not exist in the '966 patent. **Each of these steps have to happen when the devices are in standalone mode, but you don't have to continue to operate in standalone mode from the creation of the first zone scene through to invocation of the first zone scene**.

Trial Transcript at 804:1-12

PDX10.26

No Continuous Standalone Mode Requirement

Dr. Almeroth

Technical Expert

UC SANTA BARBARA
engineering

Q. So based on your evaluation, what is your opinion as to whether these limitations are still met?

A. **They are still met** for two reasons…. And then the second reason for the '966 patent is **there isn't the same kind of requirement to continuously be in standalone mode.**

Trial Transcript at 804:10-20

PDX10.27

Infringement of '885 Patent, Claim 1 - New Versions

[1.0] A first zone player comprising: ✓

[1.1] a network interface that is configured to communicatively couple the first zone player to at least one data network; ✓

[1.2] one or more processors; ✓

[1.3] a non-transitory computer-readable medium; and ✓

[1.4] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising: ✓

[1.5] while operating in a standalone mode in which the first zone player is configured to playback media individually in a networked media playback system comprising the first zone player and at least one other zone player: ✓

[1.6] (i) receiving, from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; and ✓

[1.7] (ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player; ✓

[1.8] after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation; ✓

[1.9] after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players; and ✓

[1.10] based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players. ✓

PDX10.28

Infringement – Conclusion

Asserted Claims	Accused Google Products	Version	Google Infringe?
'885 Patent Claim 1	Nest Audio, Nest Mini, Nest Hub, Nest Hub Max, Nest Wifi Point, Chromecast, Chromecast Ultra, Chromecast with Google TV, Home, Home Mini, Home Max	**Prior Versions** (Nov. 2020 – Present) / **New Version** (Dec. 2022 – Present)	✔ / ✔
'966 Patent Claims 1, 2, 4, 6, 8	Google Home + Representative Computing Devices (Google Pixel Phones, Google Pixel Tablets, Google Pixelbooks, Apple, Samsung, Motorola, OnePlus, Lenovo, HP, Acer, Asus)	**Prior Versions** (Nov. 2019 – Present) / **New Version** (Dec. 2022 – Present)	✔ / ✔

PDX10.29

Preponderance of the Evidence

"A preponderance of the evidence means evidence that persuades you that a claim is <mark>more probably true than not true</mark>."

51%   49%

Final Jury Instruction at page 2

PDX10.30

Validity

PDX10.31

Presumption Of Validity And High Burden Of Proof

- A patent is **presumed valid**

- Google must prove invalidity by ***clear and convincing*** **evidence**

Dr. Schonfeld's Invalidity Theory

Dr. Schonfeld

Google's Technical Expert
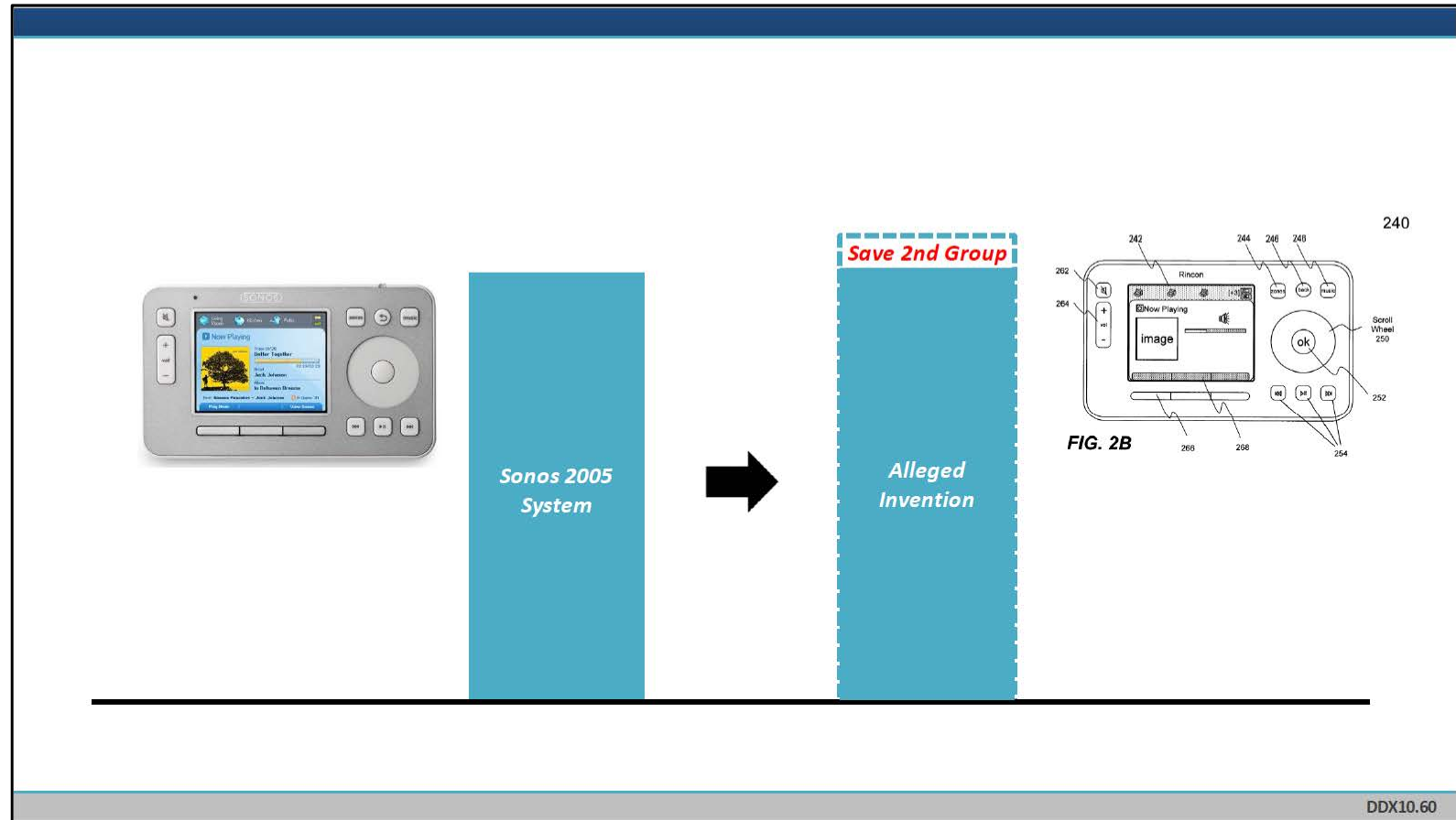
Dr. Schonfeld's Position is a House of Cards

Dr. Schonfeld

Google's Technical Expert

PDX10.34

"Party Mode" Is Really A "Select All"
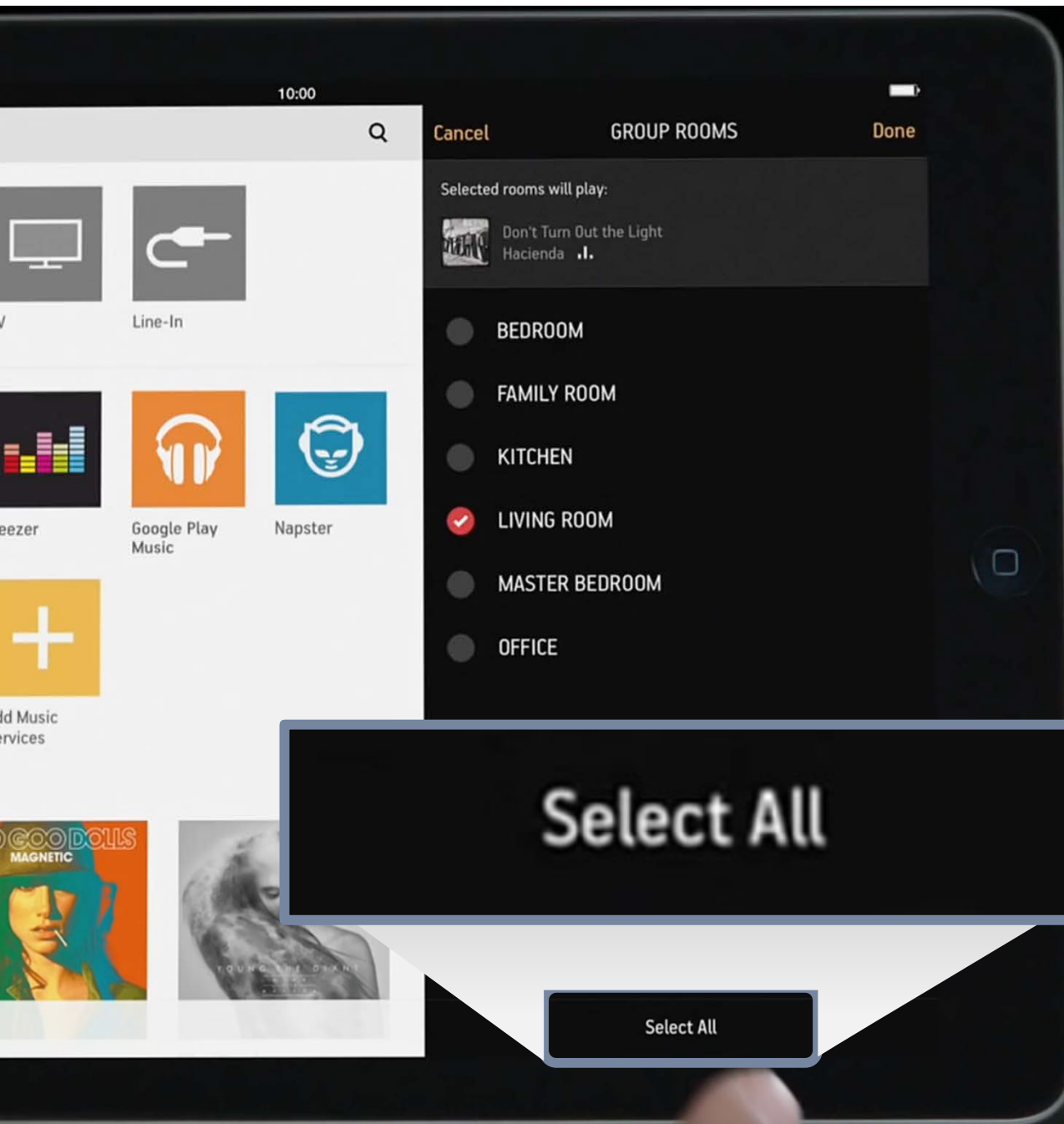
PDX10.35

"Reply All" is <u>Not</u> a Saved Group
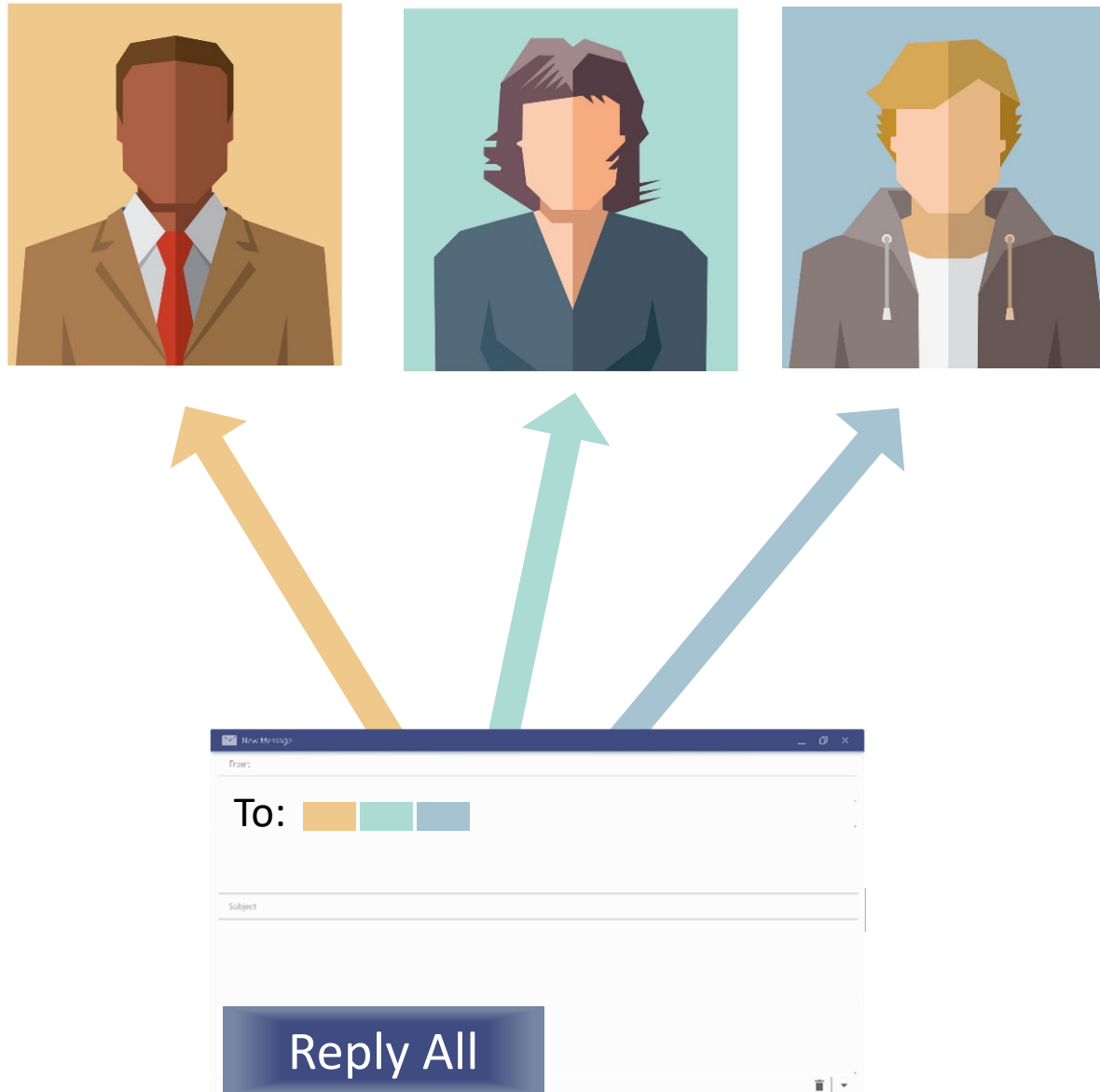
PDX10.36

Sonos's "Zone Scene" Patents
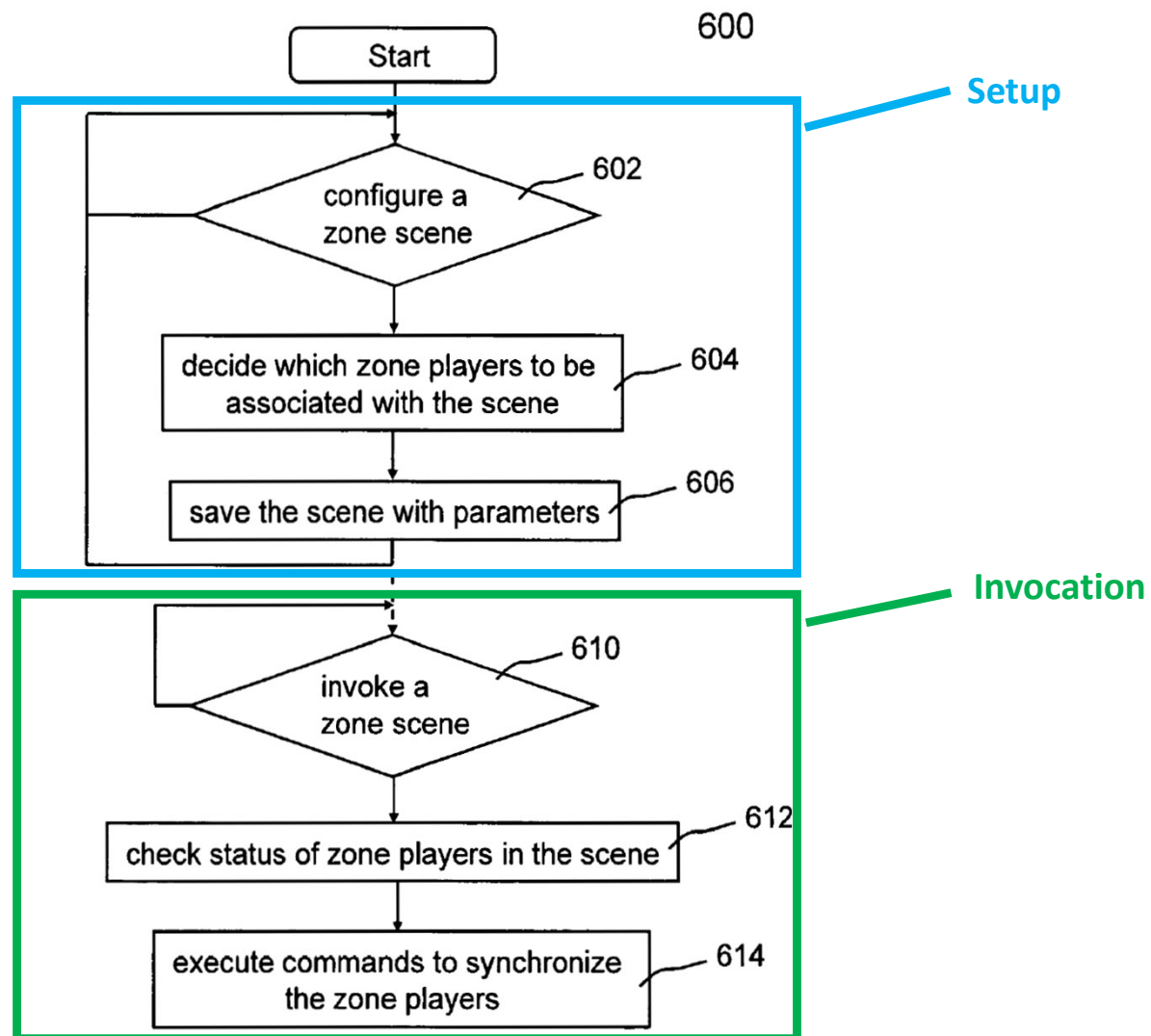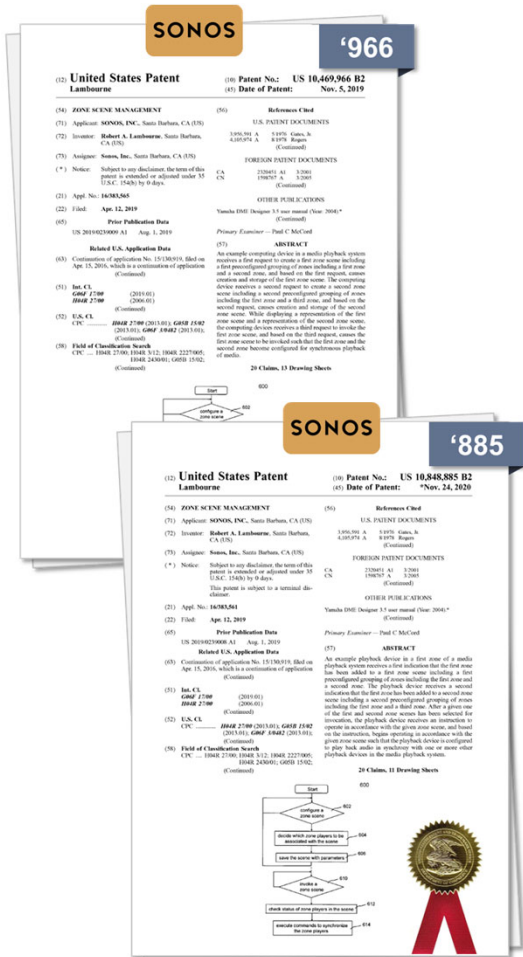
'885 Patent at Fig. 6

PDX10.37

All Zones-Party Mode is a Dynamic Group – <u>Not</u> a Zone Scene

Zone groups

A zone can be grouped together with any other zone(s) to form a zone group. This will cause all the zones in the zone group to play the same music. You can link or drop zones from a zone group while the music is playing. You can also link all the ZonePlayers in your house with one touch by selecting **All Zones-Party Mode**.
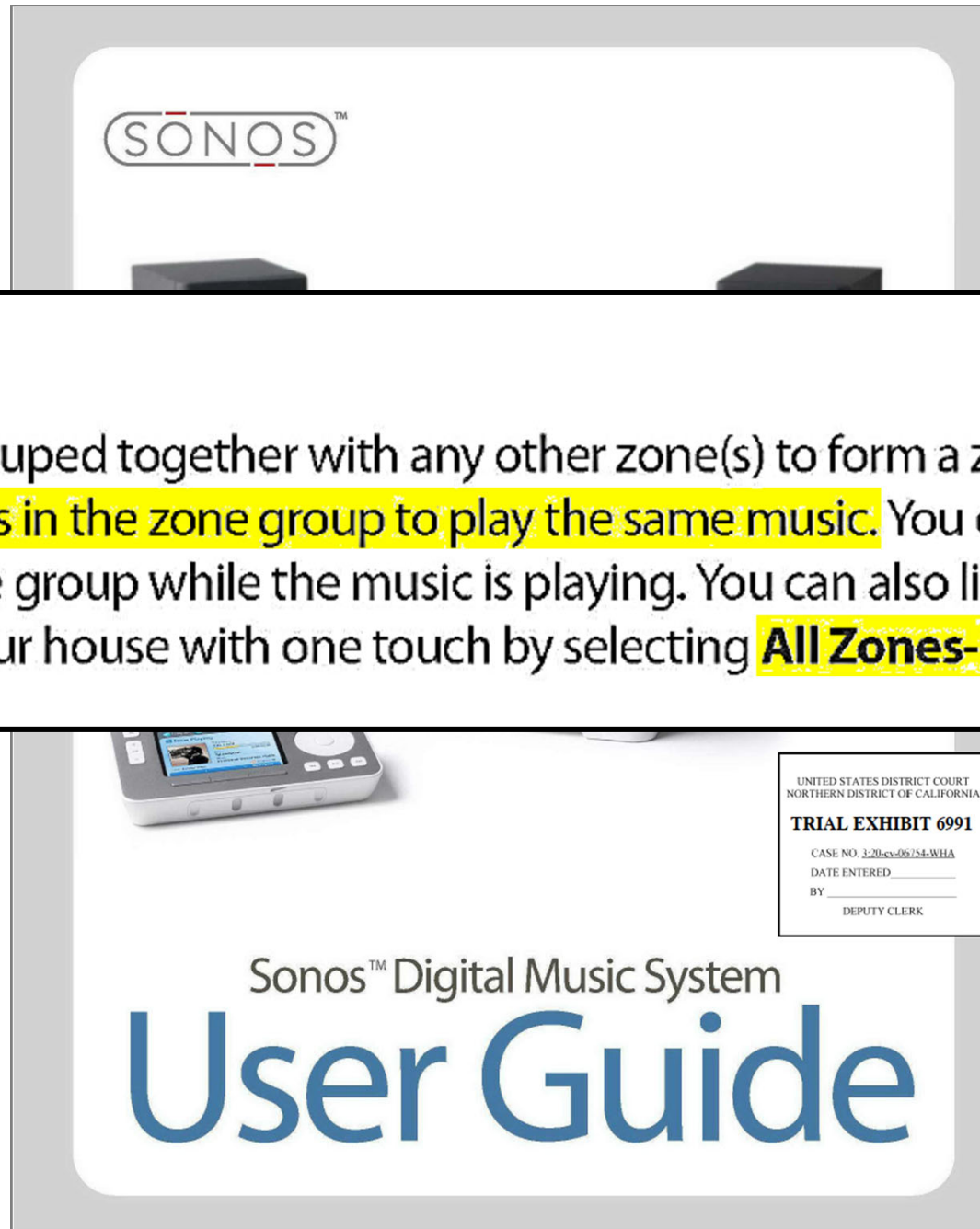
UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TRIAL EXHIBIT 6991

CASE NO. 3:20-cv-06754-WHA
DATE ENTERED _____
BY _____
DEPUTY CLERK

Sonos™ Digital Music System

User Guide

PDX10.38

2005 Dynamic Groups ≠ Zone Scenes

Nick Millington

Chief Innovation Officer

SONOS

Q.   And can you briefly describe what zone scene grouping is?

A.   Remember before how I talked about **dynamic grouping** where the group that you create is **invoked immediately and it's temporary** …. So **zone scene grouping** was another way of grouping players together …. Rather than grouping players and then having the results of that operation take effect immediately, instead you can kind of **pre-create a group** …. So it is different from the on-the-fly instant grouping that we had. Instead, this is kind of a way of **pre-grouping players and then later on invoking** ….

Millington Trial Transcript, 287:14-288:18

PDX10.39

2005 Dynamic Groups ≠ Zone Scenes

Dr. Schonfeld

Google's Technical Expert

Google

Q. So in the -- yeah, in the actual Sonos prior art system, that zone group is **activated** for synchronous playback **at the time of creation**, correct?

A. That's my understanding.

08/31/2022 Schonfeld Dep. Tr. at 51:4-8;
Schonfeld Trial Testimony at 1462:17-19

PDX10.40

All Zones-Party Mode is a Dynamic Group – <u>Not</u> a Zone Scene

Rob Lambourne

Inventor

SONOS

Q.   [W]hat were the differences, again, between Party Mode [in] the original 2005 system and zone scenes?

A.   So **Party Mode on the original system was hard coded into a controller**, which means the engineers coded it into the controller. The **user couldn't configure** them .... It **couldn't be saved to be invoked later**.

So Party Mode in the original system was **invoked immediately**. You would press the button and it would link all the zones together; whereas, a **zone scene** is an intent to group rooms together that's **saved**, but it's **not invoked immediately**.

Lambourne Trial Transcript, 464:1-12

PDX10.41

Mr. Lambourne Admitted His Mistake

Rob Lambourne

Inventor

SONOS

Q.   Sitting here today, do you believe that to be a true statement?

A.   No.

Q.   So, if it's not true, why did you write it?

A.   These were some notes that I added to the end of a spec that was sort of -- the main body of the spec was previous pages…. I used the description imprecisely. I think if I was to write -- could write it again I wouldn't have used the word zone -- Party Mode as an example of zone scene there.

Sonos UI Specification: Alarm Clock

'Party Mode' that currently ships with the product is one example of a Zone Scene.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX6544

3:20-cv-06754-WHA

Lambourne Trial Transcript, 463:2-11

PDX10.42

Mr. Lambourne Pointed To More Accurate Description

Rob Lambourne

Inventor

SONOS

Q. And can you identify where you may have been more precise about the differences between Party Mode and zone scenes?

A. Yeah. So you can consider these sort of brief notes about zone scenes at the end of an alarm clock spec. The spec I wrote about zone scenes was where I created **more clear descriptions, more accurate descriptions of zone scenes**.

Lambourne Trial Transcript, 463:12-17

PDX10.43

All Zones-Party Mode is a Dynamic Group – <u>Not</u> a Zone Scene

Sonos UI Specification
Zone Scenes
Also called:
Zone Configurations

Version 001
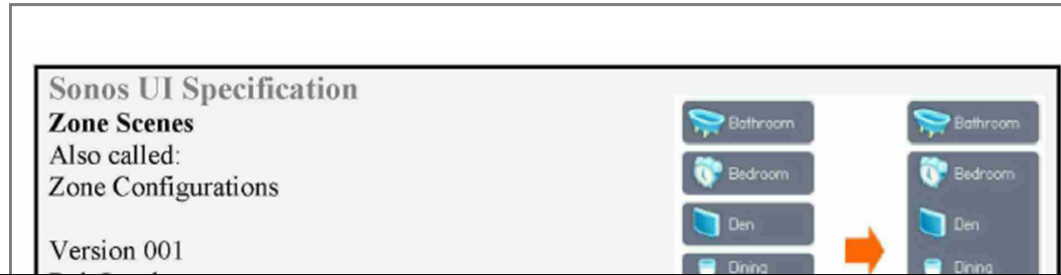
Sonos UI Specification: Zone Scenes

1   Introduction

The Zone Scene feature allows the user to arrange the zones into groups using one single command. This is similar to the current Party Mode setting that is available. However, the Zone Scene feature is much more flexible and powerful.

Currently in the Sonos UI, zone groups are created by manually linking zones one at a time until the desired zone grouping is reached.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX6454

3:20-cv-06754-WHA

PDX10.44

Rob Lambourne Fixed His Mistake

Sonos UI Specification
Clock and Alarm Clock

Master Bedroom   Kitchen   Patio   [+2]

Mon, Oct 21 2005

10.15 PM

Version 003
Rob Lambourne
Created: 10/26/05
Modified: 1/19/06
© 2004-2005 Sonos, Inc.

Alarms set for this zone: Alarm 1 (7:15am), Alarm 2 (10:30pm)

Snooze | Snooze | Snooze

About this document

Table of Contents

Notes
This spec doesn't yet include:
Concept of 'zone scenes' (but they are described in the final chapter)..
Standard 'beep' sounds for backup if the music doesn't play.
Setting Current date and time on the CR (DCR is included)

TBDs
Should the Sonosnet get its time and date from the Internet?

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TX6544
3:20-cv-06754-WHA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Robert A. Lambourne
Title:	Controlling and manipulating groupings in a multi-zone music or media system
Serial No.:	60/825,407
Filing Date:	09/12/2006
Assignee:	
Examiner:	Unknown
Group Art Unit:	Unknown
Docket No.:	RIN-022P

Appendix B

Table of Contents

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TX2651
3:20-cv-06754-WHA

PDX10.45

USPTO Already Considered Sonos's 2005 System

TrackOne Request   PTO/AIA/424 (04-14)

...CATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e) (Page 1 of 1)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TRIAL EXHIBIT 0006

CASE NO. 3:20-cv-06754-WHA
DATE ENTERED_____
BY_____
DEPUTY CLERK

...obert A. Lambourne | Nonprovisional Application Number (if known):

Zone Scene Management

...LICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR
THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in
37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met...

22	Sonos Digital Music System User Guide, Version: 050801, August 2005, 114 pages.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each
inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is...

Examiner Signature	/PAUL C MCCORD/	07/01/2019	Date Considered

v. No prior request for continued examination has been granted prioritized examination status
under 37 CFR 1.102(e)(2).

| Signature | /Brandon J. Kennedy/ | Date | April 12, 2019 |
| Name (Print/Typed) | Brandon J. Kennedy | Practitioner Registration Number | 67,894 |

Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.
Submit multiple forms if more than one signature is required.*

☐ *Total of _____ forms are submitted.

SONOS-SVG2-00011280

TX0006, Page 1 of 6710

TX0006 at pp. 3817, 3820

PDX10.46

Validity – Conclusion

'885 Patent

VALID

'966 Patent

VALID

PDX10.47

Google's Obviousness Theories

Crestron

Nourse

Sonos 2005 System

Obvious?

Sonos Forums

Squeezebox

PDX10.48

How Google Must Establish Obviousness:

1. The claimed **invention as a whole** must have been obvious based on the combination of prior art references

2. There must have been a **motivation to combine/modify** the prior art references **in the same way** as the claimed invention

3. There must have been a **reasonable expectation** that combination would succeed

4. Combination of prior art references **must enable** the claimed invention

5. **Cannot use hindsight reasoning**

PDX10.49

Sonos Forums Is A Wish List

floras_dad Lyricist III · 20 replies   17 years ago

Great idea. A macro-like scripter would enable you to set groups of zones, associate pl   27 September 2005
volumes, etc. You could do these as dynamic "presets" based on the Party Mode--which the spouse
would love--like Entertaining, Romantic Dinner, Ambiance, etc.

This is a great like-to-have.

Majik · 6113 replies   17 years ago

Yes this sounds good.   22 September 2005

Something like the ability to create a "zone group" which appears on the zone
list, and perhaps the ability to hide/lock individual zones.

I'm not sure how the "Preset volume" and source/playlist would work in this
context. You wouldn't necessarily want this activated every time you selected
the zone group, or how would you select the group to change the volume,
etc.?

Perhaps we need a "presets", page (perhaps using the soft-keys on the Zone
screen) to allow a preset to be initiated. This preset could comprise a zone (or
zone group), a volume profile, and a source or playlist, or it could be a macro
sequence.

Discuss..... :)

Cheers,

Keith

Virtual Zones and Zone Grouping

17 years ago · 190 replies · 45404 views

27 February 2005

theboyg Avid Contributor I · 22 replies

This "link/unlink" business is really cumbersome - and not a joy to use which goes against the ease of
use of the rest of the system.

Why can't I have a virtual zone - ie a zone called "Downstairs" - and I can group all my downstairs
zones into this. Then I dont have to keep manually linking/unlinking multiple zones everytime.

PLEASE !

G.

---

17 years ago   61 replies   15142 views

22 September 2005

JeffT Trending Lyricist   20 replies
I

Just got the intro bundle, and I am impressed. I did a search and did not find this suggested, but I would save
Zone links as favorites. With only 2 ZPs it is not a problem yet, but when I add more it maybe. I would like to
setup say Morning mode for the units I want in the morning and a preset volume between the units. Another
example I would have 2 party modes, Summer and Winter. The Summer mode would include the deck
speakers and the Winter mode would not. Also it would be nice to have playlists or radio station associated
with each mode. So when I get up I press Morning the DI Chill radio station plays.

PDX10.50
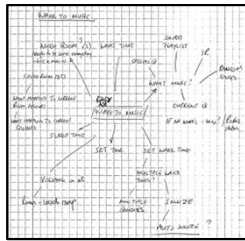
Jan 20 - Feb 27, 2005
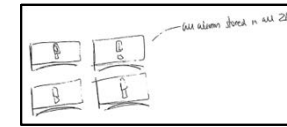Mr. Lambourne sketchbook re: *zone scenes*
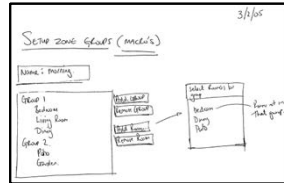
Mar 2, 2005
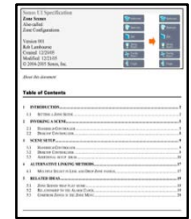Mr. Lambourne sketchbook re: *zone scenes*

Apr 11, 2005
Mr. Lambourne emails re: *zone scenes*

Nov 4-11, 2005
Mr. Lambourne sketchbook re: *zone scenes*

Dec 21, 2005
Mr. Lambourne UI Specification re: *zone scenes*
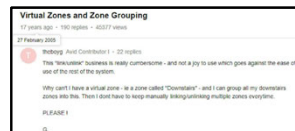
June 2003
Mr. Lambourne joins Sonos
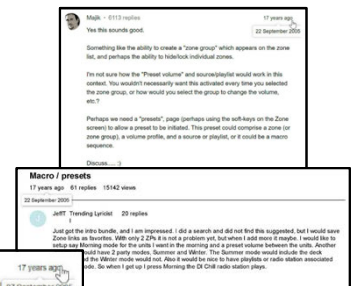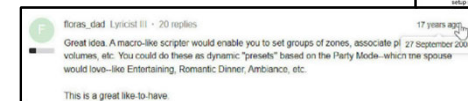
2002 2003   2005

Mid-2002
SONOS
founded

Jan 2005
SONOS
1st products launched

Feb 27, 2005
Theboyg post
Sonos Forums

Sept 22, 2005
Sept 27, 2005
JeffT, Majik and Florasdad posts
Sonos Forums

PDX10.51

The Patent Office Considered All "Prior Art"

22	Sonos Digital Music System User Guide, Version: 050801, August 2005, 114 pages.
3	Crestron Adagio AMS Media System Operations Guide, 2008, 114 pages.
4	Crestron. Adagio. Home Entertainment is Just the Beginning...2007, 10 pages.
5	Crestron. AVS Forum. 1 December 2007, 9 pages.
20	7197148	2007-03-27	NOURSE; James D. et al.
24	Squeezebox Network Music Player. Owner's Manual, Slim Devices, 2003, 22 pages.
14	NewsRoom. Slim Devices Introduces Slimserver, 18 November 2003, 2 pages.
22	Squeezebox by Logitech. Owner's Guide, 2007, 32 pages. .
19	Logitech/Slimserver. Github. Version 2.3 Release. 19 May 2002. 2 pages [produced by Google in Inv. No. 337-TA-1191 on May 6, 2020].
44	Yamaha DME Designer 3.5 User Manual; Copyright 2004, 507 pages.
9	Bose. The Bose Lifestyle 50 System. Owner's Guide, October 17, 2001, 55 pages.

| Examiner Signature | /PAUL C MCCORD/ | 07/01/2019 | Date Considered |
| Examiner Signature | /PAUL C MCCORD/ | 08/06/2020 | Date Considered |

TX0006 at pp. 3817, 3820, 6587, 6588, 6594, 6602, 6605, 6630, 6634, 3948, 6570

PDX10.52

No Motivation to Modify/Combine – Praise for Sonos 2005

FIRST LOOKS
Entertainment Technology

An Audio Hub that Actually Works, Easily

BY BILL HOWARD

The Sonos ZonePlayer ZP100 is the iPod of digital audio hubs. It's a joy to use: well engineered, driven by a scroll wheel, and finished in milky white. This is the first digital audio hub we can recommend without reservation. Even the price is reasonable.

"It can play the same music throughout the house, **perfectly synchronized**…. **[O]ther hubs don't do it**. And you can **join multiple rooms to play the same music** or put something different on in other rooms on the fly."

TX6979, Page 1 of 1

36 PC MAGAZINE MARCH 22, 2005 www.pcmag.com

TX6979
3:20-cv-06754-WHA
UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
at 3

PDX10.53

Zone Scenes Were Complex in 2005, Even to Sonos Engineers

From: Rob Lambourne <O=RINCON NETWORKS/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=ROB.LAMBOURNE>
Sent: Monday, April 11, 2005 1:13 PM
To: Andrew Schulert <Andrew.Schulert@sonos.com>
Subject: RE: Another UI idea - grouping/ungrouping zones

Thanks Andy,

Yes this reverting to previous groups feature could get messy, I think it could work if we only allow it to happen if the Zones are all linked in party mode. If the user has adjusted the groupings after invoking party mode, we'd need to get very clever (and complicated) to provide a UI that makes sense to allow the revert to work.

From: Andrew Schulert
Sent: Friday, April 08, 2005 3:31 PM
To: Rob Lambourne
Subject: Another UI idea - grouping/ungrouping zones

Hi Rob,

More free UI advice ☺

One of the problems with our system is we don't have a way of permanently linking zones together. So, for instance, I normally always keep the two zones in my kitchen linked together. But when I have guests, I may link them with the rest of the zones in the first floor. Which is fine, except when I want to restore things, I unlink them all and then relink the kitchen zones.

I'd like to solve this without introducing the complexity of "zone groups."

Rob

From: Andrew Schulert

Sent: Friday, April 08, 2005 3:31 PM

To: Rob Lambourne

I'd like to solve this without introducing the complexity of "zone groups."

UNITED STATES DISTRICT CURT
NORTHERN DISTRICT OF CALIFORNIA
TX0120
3:20-cv-06754-WHA

PDX10.54

Skepticism on Sonos's Forums

Majik   15 years ago   ← **April 18, 2006**

Agreed.

The ease of lining/unlinking zones is also dependent on the number of zones you have. 2 or 3 zones isn't too much of an imposition, but I imagine 6 or more is quite painful.

Just imagine if you had the full 32 zones!

At the moment we have a single, pre-defined group, that being "All Zones". I would like to see this as the default, but with the ability to configure your own groups and to delete the "All zones" group (some may not want this).

This would help with people who are having trouble blasting their neighbours during 2am parties by accidentally selecting hottub/garden.

Now this brings an interesting question: should zones be allowed to be in more than one group? If this is allowed, are there any unwanted side-effects with this?

Now this brings an interesting question: should zones be allowed to be in more than one group? If this is allowed, are there any unwanted side-effects with this?

head I can see uses for:

* Hide all zones (only show groups)
* Sorting (by name or groups before zones)

These could be either by a user preference or by a toggle button on the zone screen.

Also, how would these be displayed on the other screens (e.g. now playing)... as groups or as individual zones? I suspect individual zones would be better, as this takes into account all circumstances of use.

Cheers,

Keith

PDX10.55

Skepticism on Sonos's Forums

jgatie · 23215 replies   6 years ago ← **Jan. 8, 2016**

Once again, it is logically impossible to have the same speakers in multiple groups. It's easy to demonstrate:

Once again it is logically impossible to have the same speakers in multiple groups.

Group B contains speakers 2 & 3

If I play Led Zeppelin in Group A and Chopin in Group B, what is playing on speaker 2?

1 person likes this

👍 Like   💬 Quote

jgatie · 23215 replies   6 years ago ← **Jan. 8, 2016**

The Mekon wrote:
Well that's easy - either just play on the speaker the most recent group selected, or throw an error

As a software developer I care. I support creating permanent groups. I do not support the illogical concept of a speaker belonging to more than one group. It's stupid.
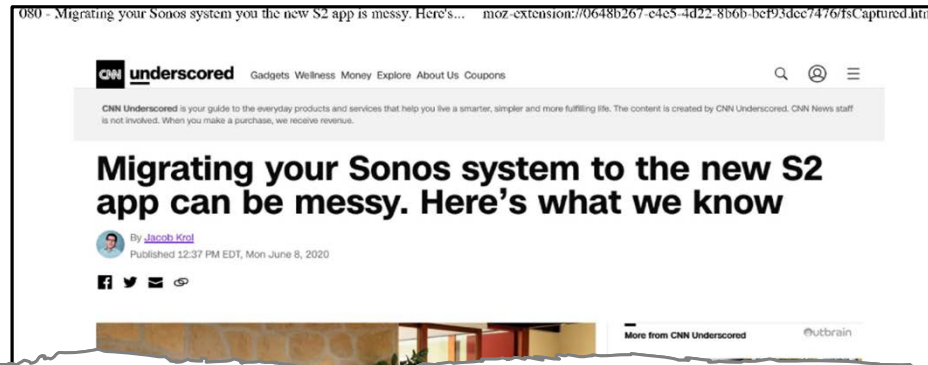
As a software developer, I care. I support creating permanent groups. I do not support the illogical concept of a speaker belonging to more than one group. It's stupid.

1 person likes this

👍 Like   💬 Quote

PDX10.56

Praise of Sonos's "Zone Scene" Inventions

080 - Migrating your Sonos system you the new S2 app is messy. Here's...   moz-extension://0648b267-c4e5-4d22-8b6b-bef93dec7476/fsCaptured.html

CNN underscored   Gadgets Wellness Money Explore About Us Coupons

CNN Underscored is your guide to the everyday products and services that help you live a smarter, simpler and more fulfilling life. The content is created by CNN Underscored. CNN News staff is not involved. When you make a purchase, we receive revenue.

Migrating your Sonos system to the new S2 app can be messy. Here's what we know

By Jacob Krol
Published 12:37 PM EDT, Mon June 8, 2020
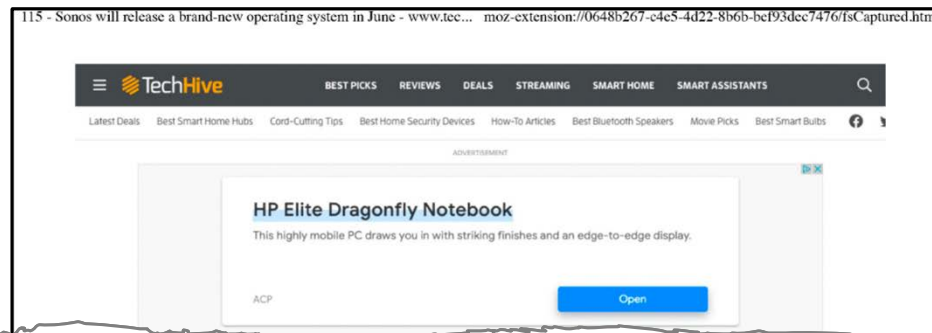
More from CNN Underscored   outbrain

"By far the **best feature** of **Sonos S2** is the ability to **save a group of speakers as a preset**. No longer will you need to constantly select which speaker you want to listen to each time. **Save it as a group**, and you're better off. **It's really great….**"

CNN

as you don't have any S1 products, the migration will be easy enough. Sonos says all you need to do is delete the current app from your device and download the new Sonos app. It has a tan color instead of the classic black that Sonos is known for.

The complication arises if you currently have a system that uses both S1 and S2 products. You can't move that system over to S2 without splitting it — essentially keeping the S1 products on S1 and moving the rest to

1 of 4   2/14/22, 10:02 AM
                                                                                        SONOS-SVG2-00062361

at SONOS-SVG2-00062361

PDX10.57

Praise of Sonos's "Zone Scene" Inventions

"[A] new feature called 'room groups,' … could be very useful … and will also remember frequently grouped speakers, such as 'Upstairs; 'Downstairs,' 'Front of House,' and 'Back of House,' so you don't need to repeatedly create those scenarios."
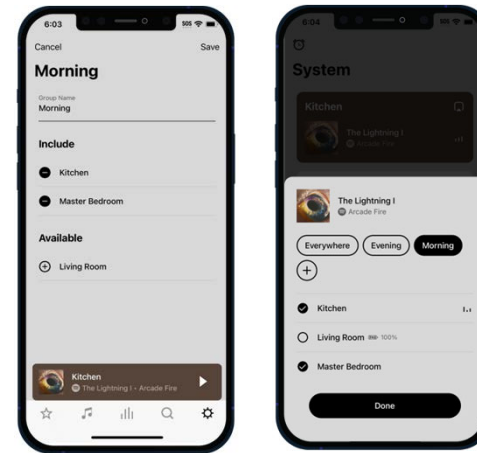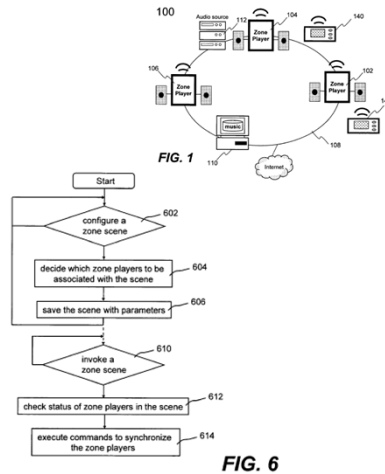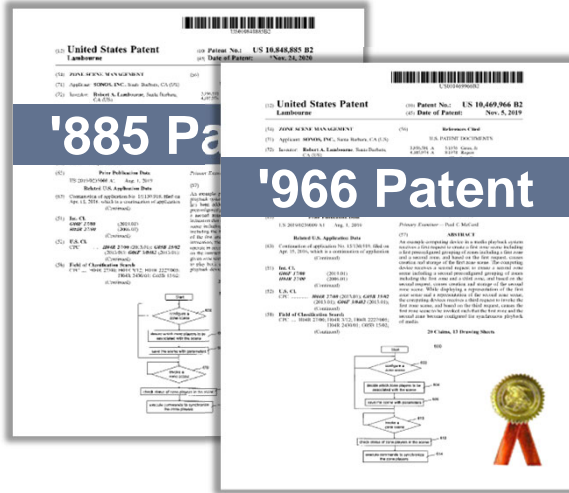
TX6788
UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
3:20-cv-06754-WHA

at SONOS-SVG2-00062444

PDX10.58

Obviousness Analysis: Cannot Use Hindsight Reasoning

Validity – Conclusion

'885 Patent

VALID

'966 Patent

VALID

PDX10.60

Damages

PDX10.61

Hypothetical Negotiation

James Malackowski

Economist

OCEAN TOMO®

Reasonable Royalty

Google

SONOS

Patented Technology
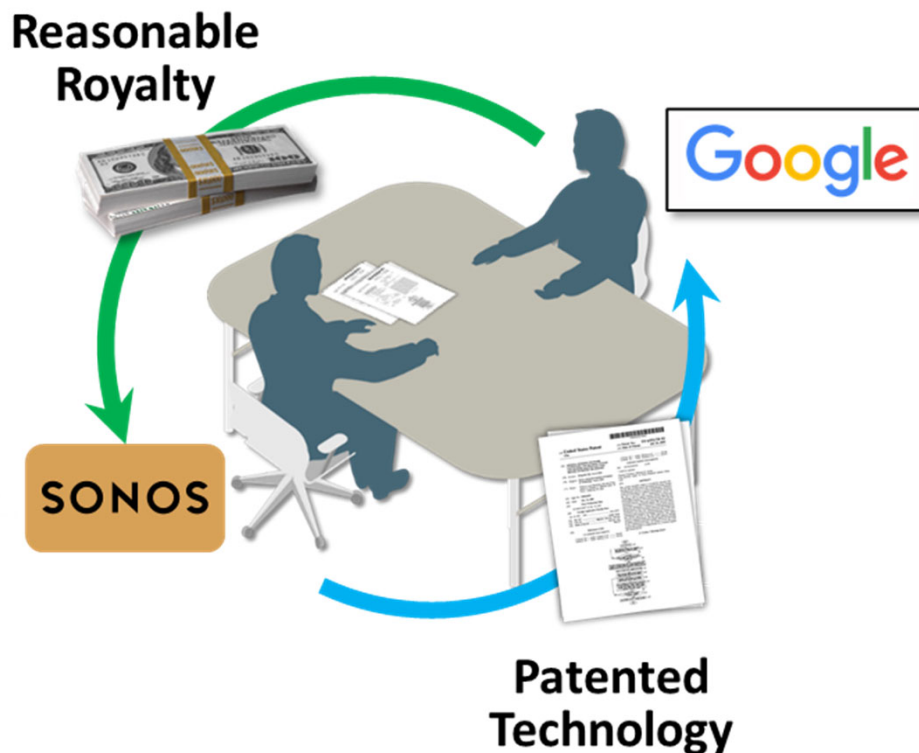
The royalty that a licensor (such as Sonos)
and a licensee (such as Google)
would have agreed upon if both had been
**reasonably and voluntarily trying
to reach an agreement**

PDX10.62

Georgia-Pacific Factors

Licensing	The Invention	Economics
1. Other licenses for these patent	9. Advantages over substitutes	5. Commercial relationship between the parties
2. Comparable patents licensed or purchased by the infringer	10. Nature and benefits of patented invention	6. Derivative or convoyed sales
3. Nature and scope of license	11. Extent and benefit from infringer's use of the patent	8. Profitability of product
4. Established policy and licensing programs	12. Customary industry value benchmarks	14. The opinion of qualified experts
7. Duration of the patent	13. Portion of profit related to the invention	15. Amount deemed reasonable as a result of hypothetical negotiations between licensee and patent holder

Georgia-Pacific Corp. v. United States Plywood Corp., 318 F. Supp. 1116 (S.D.N.Y. 1970)

PDX3.63

Sonos's Licenses – *Georgia-Pacific* Factor # 1

Alaina Kwasizur

General Counsel
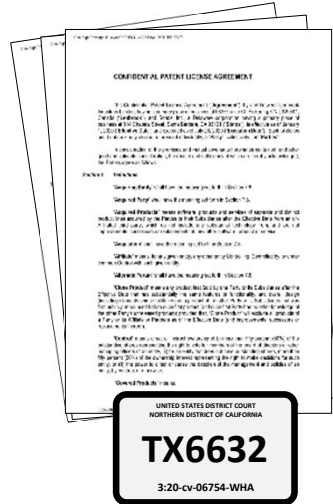
PDX10.64

Georgia-Pacific Factor # 1

Other Licenses for these Patents

This Confidential Patent License Agreement ("**Agreement**"), by and between Lenbrook Industries Limited, having a primary place of business at 633 Granite Ct, Pickering, ON L1W 3K1, Canada ("**Lenbrook**"), and Sonos, Inc., a Delaware corporation having a primary place of business at 614 Chapala Street, Santa Barbara, CA 93101 ("**Sonos**"), is effective as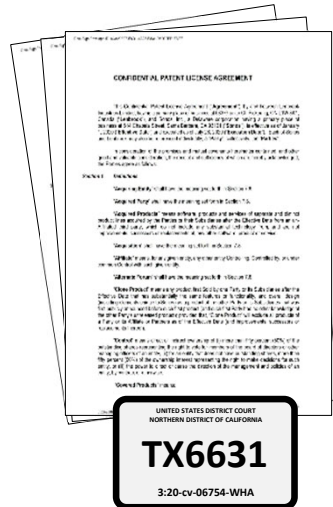 of January 1, 2020 ("**Effective Date**") and executed as of July 28, 2020 ("**Execution Date**"). Each of Sonos and Lenbrook may also be referenced individually, a "**Party**"; collectively, the "**Parties**".

4.2.1.1 <u>U.S. Licensing Royalties</u>. For each Covered Product Sold in the United States (excluding those Sold for export), the following Royalty Rates shall apply:

Sonos US Patent Portfolio Licensing Rates

Units of Covered Product(s) Sold annually	0-5,000	5,001-10,000	10,001-20,000	20,001-40,000	40,001+
Royalty Rate	$12	$15	$19	$24	$30

CONFIDEN

This Confidenti
Industries Limited, hav
Canada ("**Lenbrook**"
business at 614 Chapa
1, 2020 ("**Effective Da**
and Lenbrook may also

In consideration
good and valuable con
the Parties agree as fo

Section 1.   Definitions

"Acquiring En

"Acquired Part

"Acquired Pro
product lines acquired
Affiliated third party,
improvements, succes

"Acquisition" s

"Affiliate" mear
common Control with s

"Alternate For

"Clone Produ
Effective Date that ha
(including elements un
first publicly announce
the other Party's unrel
a Party or its Affiliate
replacements thereof).

"Control" mear
outstanding shares rep
managing officers of ar
fifty percent (50%) of
entity, or (iii) the powe
entity, by contract or ot

"Covered Pro

B5142886.11

Highly Confidential - Attorneys' Eyes Only

TX6632, Page 1 of 22

CASE NO. 3:20-cv-06754-WHA
DATE ENTERED_____
BY _____
DEPUTY CLERK

SONOS-SVG2-00042923

SONOG-SVG2-00042923-944 at 923, 927-928.

PDX3.65

Georgia-Pacific Factor # 1

Other Licenses for these Patents

CONFIDENTIAL PATENT LICENSE AGREEMENT

This Confidential Patent License Agreement ("**Agreement**"), by and between Pass & Seymour, Inc. ("**Licensee**"), having a primary place of business at 50 Boyd Avenue, Syracuse, NY 13221, and Sonos, Inc. ("**Sonos**"), a corporation having a primary place of business at 614 Chapala Street, Santa Barbara, CA 93101, is effective as of December 1, 2020 ("**Effective Date**"). Sonos and Licensee (each individually, a "**Party**"; collectively, the "**Parties**") agree as follows.

4.2.1.1 U.S. Licensing Royalties. For each Covered Product Sold in the United States, the following Royalty Rates shall apply:

Sonos US Patent Portfolio Licensing Rates

Units of Covered Product(s) Sold annually	0-5,000	5,001-10,000	10,001-20,000	20,001-40,000	40,001+
Royalty Rate	$12	$15	$19	$24	$30

TX6631, Page 1 of 18

SONOS-SVG2-00042905

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX6631

3:20-cv-06754-WHA

SONOG-SVG2-00042905-922 at 905, 910.

PDX3.66

Georgia-Pacific Factor # 2

Comparable Patents Licensed or Purchased by the Infringer

Licensee	Malackowski	Reason	Google Expert	Reason
Times Square	❌	NPE; Worldwide	❌	Worldwide
Haltek	❌	NPE (via IIF)	❌	NPE (via IIF)
Vendaria Media	❌	NPE (via IIF)	❌	NPE (via IIF)
Outland Research	❌	**NPE**	✅	**Similar**
Peekaboo	❌	NPE	❌	None Provided

Supplemental Expert Report of James E. Malackowski, December 9, 2022, Sections 11.7 and 12.1.2; Reply Expert Report of James E. Malackowski, January 23, 2023, Section 6; Rebuttal Expert Report of W. Christopher Bakewell, January 13, 2023, pp. 181-204.

PDX3.67

Outland Research – Comparable?

FIG. 2

PDX10.68
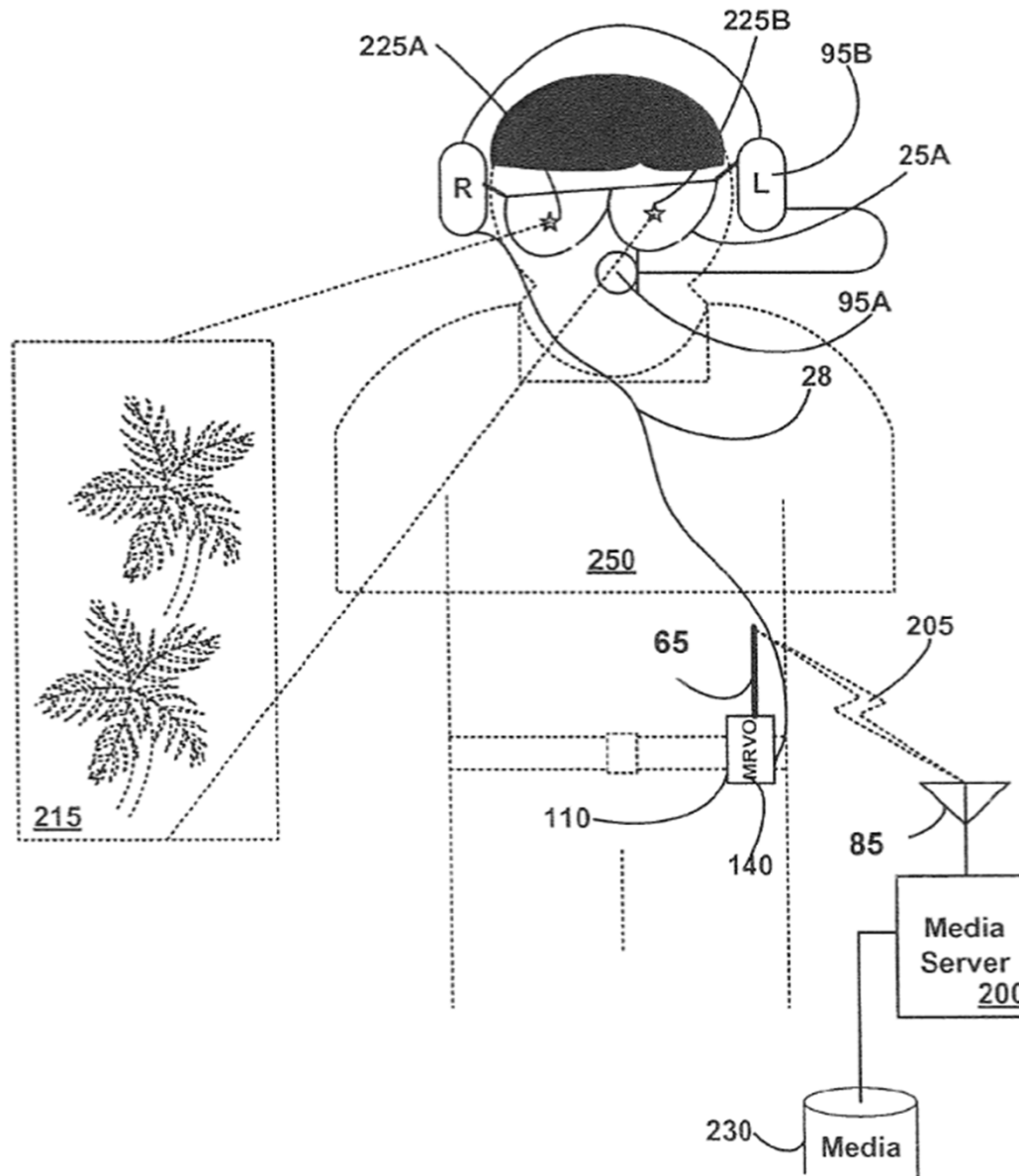
Georgia-Pacific Factor # 5

Commercial Relationship Between the Parties

Google **recognizes competition** with Sonos

Conjoint Attributes & Levels

Brand	Voice assistant / control	Cables included	Audio Quality	Streaming options	Price
Google with Google Assistant	Included with your purchase, built in to dongle	3.5mm to 3.5mm (analog)	Above average (e.g. movie theater quality)	Bluetooth	$19.99
Amazon with Amazon Alexa	Included with your purchase as an additional piece of hardware (e.g. Echo Dot, Google Home Mini)	3.5mm to RCA (analog)	Average (e.g. car stereo quality)	Wi-Fi	$29.99
Sonos with Google Assistant	Not included, requires additional speaker sold separately (e.g. Echo Dot, Google Home Mini)	Mini TOSLINK to TOSLINK/Optical (Digital)		Bluetooth and Wi-Fi	$39.99
Sonos with Amazon Alexa		3.5mm to 3.5mm (analog) and Mini TOSLINK to TOSLINK/Optical (Digital)		Bluetooth, Wi-Fi, and stereo / surround sound	$49.99
		3.5mm to RCA (analog) and TOSLINK/Optical (Digital)		Stereo / surround sound and Bluetooth	$79.99
				Stereo / surround sound and Bluetooth	$89.99

WiFi Speakers

Entry Level
Sonos PLAY:1 ($199)
Google Home ($129)

Premium
Sonos PLAY:5 ($499)
Google Home Biggie ($399)

++ Bass
++ Clarity
++ Louder
++ Larger

Supplemental Expert Report of James E. Malackowski, December 9, 2022, Section 14.5;
GOOG-SONOSNDCA-00056580-600 at 583; GOOG-SONOSNDCA-00056500-572 at 502.

PDX3.69

Georgia-Pacific Factor # 6

Derivative or Convoyed Sales

Google generates **significant indirect revenue** from related non-hardware sales
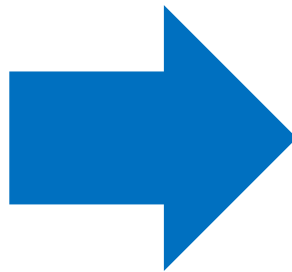
Chromecast, Nest, Pixel

YouTube, YouTube TV, Search, E-commerce

Supplemental Expert Report of James E. Malackowski, December 9, 2022, Sections 13 and 14.6

PDX3.70

Georgia-Pacific Factor # 12

Customary industry value benchmarks

Smart speaker owners
How many smart speakers do you have in your home?

	One	Two	Three or more	Mean
Spring 2019	52%	27%	21%	1.9
Spring 2020	47%	24%	29%	2.1

"The Smart Audio Report – Spring 2020," *NPR*, slide 9, https://www.nationalpublicmedia.com/uploads/2020/04/The-Smart-Audio-Report_Spring-2020.pdf

PDX3.71
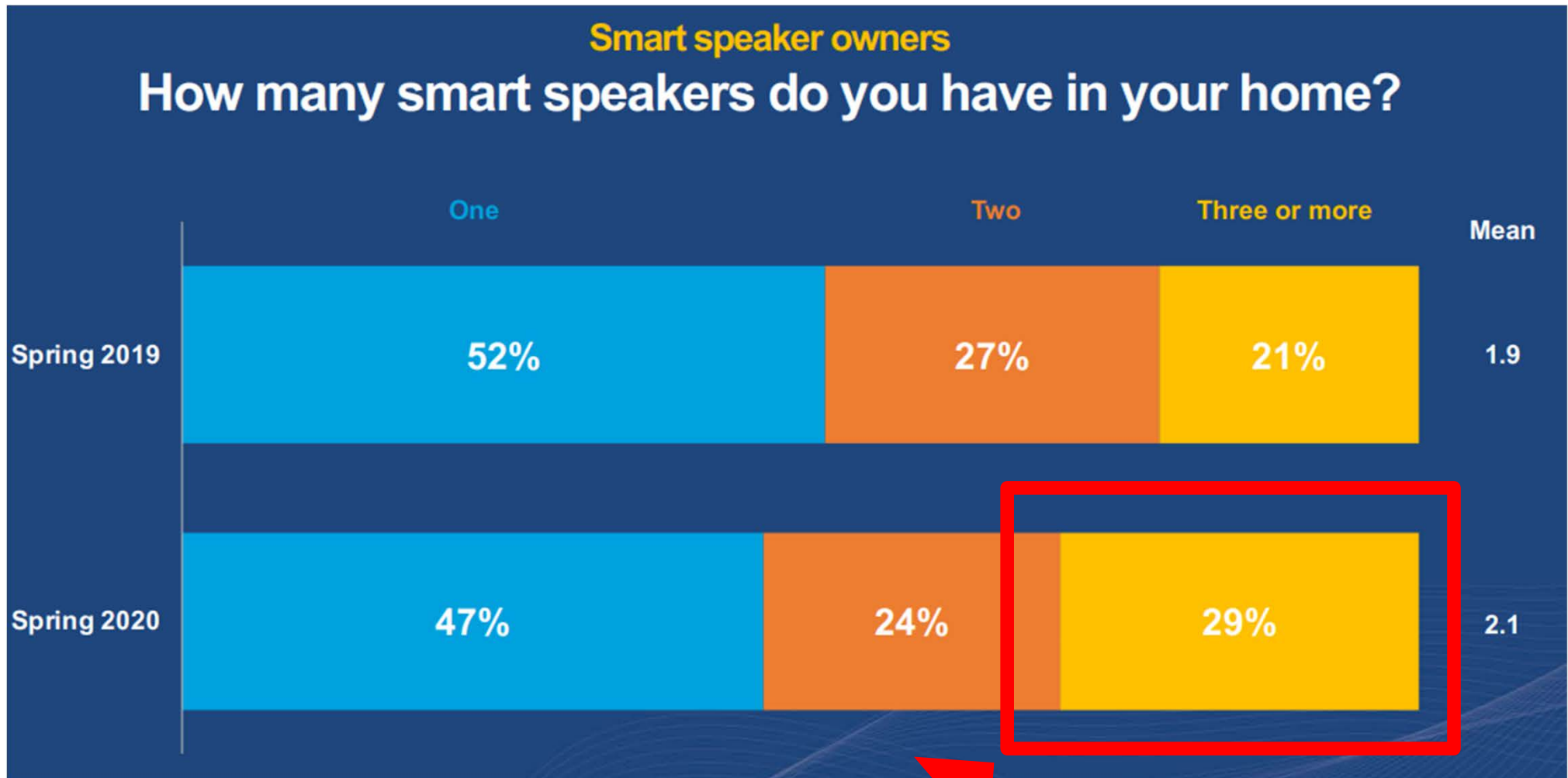
60% of Consumers Plan to Buy Multiple Speakers

Key Takeaways

- Brand is a strong influencer on choice, and Google does well - but Amazon owns this space
  - Although the mini, home, and max are all appealing, Amazon edges out all three
  - Most intenders are considering Amazon products so Google will need to make a significant effort to capture those interested in Prince
- Offering a 2-pack will increase share; future feature recs also support 2-pack
  - 60% of consumers plan to buy more than 1 smart speaker. And almost half build a 2-pack of smart speakers
  - Consumers are also interested in surround sound and other future features that play nicely within a bundle
  - However, more research needs to be done as to whether this is a hard or soft bundle
- Sabrina should be packaged with Prince as its use case is incredibly appealing
  - The majority of consumers are interested in the concept of Sabrina, and 73% add it to their smart speaker for $49!
  - Adding Sabrina to Prince increases share by 2x! Even when increasing costs from $99 to $149
- Compatibility and use cases seem to have more influence than audio features
  - This data shows it is more important to include Sabrina or multiple music options than adding any of the audio features - ambient tuning, room tuning, or dolby inside

PDX10.72

58% of Consumers are Likely to Buy 3 Smart Speakers

Likelihood to add a 3rd smart speaker is decently high, but a 5 pack seems niche.

Likelihood to Purchase Different Bundles

Legend: ■ Not likely at all ■ Not very likely ■ Somewhat likely ■ Very likely ■ Extremely likely

Bundle	Not likely at all	Not very likely	Somewhat likely	Very likely	Extremely likely
3 smart speakers for $250 (A savings of ~$50)	9%	11%	23%	32%	26%
4 smart speakers for $340 (A savings of ~$60)	17%	21%	16%	24%	22%
5 smart speakers for $420 (A savings of ~$80)	26%	21%	15%	16%	21%

PDX10.73

Damages Determination

'966 Patent
94.7 million
Google Home
app installs

MORE PRODUCTS

=

GREATER USAGE

=

MORE REVENUE

'885 Patent
14.1 million
Google Home,
Nest, and
Chromecast units

Supplemental Expert Report of James E. Malackowski, December 9, 2022, Sections 12.2 and 14.11, Appendix 7.2-S;
Reply Expert Report of James E. Malackowski, January 23, 2023, Appendix 7.4-R

PDX3.74
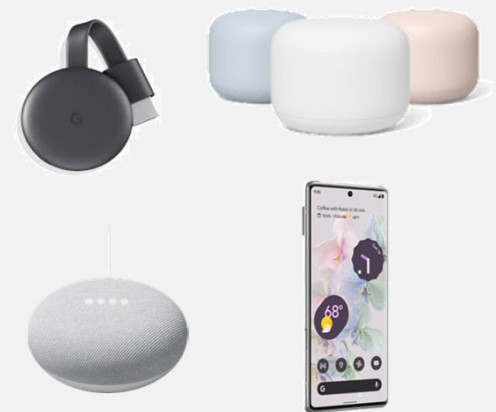
Google's Puzzle Will Get You Lost

Google's Opening Presentation at 36

Google's Excuses

We don't Infringe

We Do It Differently

Their Patents Are Invalid

Not Valuable

PDX10.76
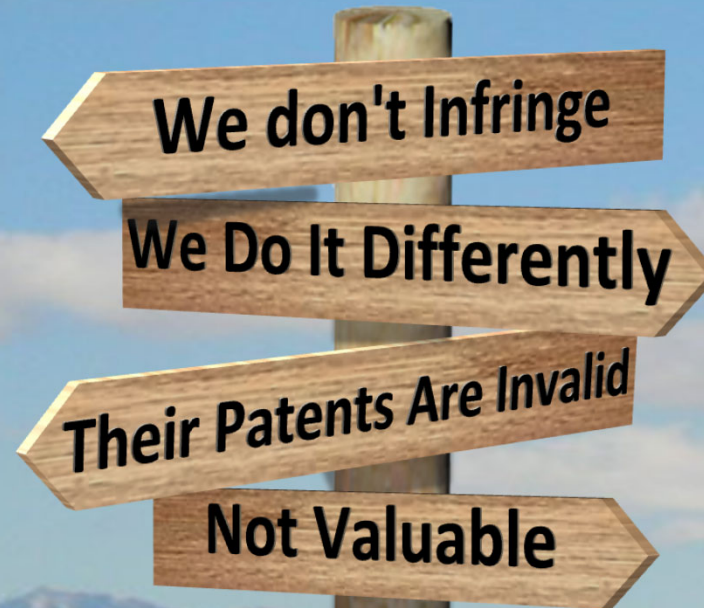
Speakers in "Idle Mode" are <u>Not</u> Idle

Kenneth MacKay
Senior Staff
Software Engineer

Google

Q. And so even though the living room speaker is in what you refer to as idle mode, the **speaker is still operating**; correct?

A. There's still **code running** on the device.

Q. It's **plugged in**; right?

A. Correct.

Q. And it's **powered on**?

A. **Yes**.

Q. And the **speaker's operating system is running**; correct?

A. That's **correct**.

Q. And the speaker is still **available for selection by a user**; correct?

A. **Correct**.

Q. And the speaker is **operating in a mode in which its audio volume level can be adjusted**; correct?

A. **Yes**, you can adjust the audio volume level.

Trial Transcript at 1280:21-1281:10

PDX10.77

Google's Redesign – Stop the Music

HIGHLY CONFIDENTIAL—ATTORNEYS' EYES ONLY

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP
  Charles K. Verhoeven (Bar No. 170151)
2 charlesverhoeven@quinnemanuel.com
  Melissa Baily (Bar No. 237649)

Non-Infringing Alternative #2 – no standalone mode

A non-infringing alternative is an implementation in which when the accused "standalone"

speaker is added to a target group, and it matches the music (or silence) of the target group.

* * * *

Google has publicly released a new version of its source code through software updates to

25% of the accused Google products with a display, and plans to continue rolling out the change to

the remaining accused products through December 2022.

23
24 **GOOGLE LLC'S EIGHTH SUPPLEMENTAL OBJECTION AND RESPONSE**
   PLAINTIFF SONOS, INC.'S FIRST SET OF FACT DISCOVERY INTERROGATORIES
25
26   Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendant Google LLC
27 ("Google") hereby objects and responds to Plaintiff Sonos, Inc.'s ("Sonos") First Set of Fact
28 Discovery Interrogatories to Defendant ("Interrogatories"). Google responds to these

TX0280, Page 1 of 17

Google 11/21/202 Resp. to Rog 18 at 8-10

Google

PDX10.78

Google's Redesign is <u>Not</u> Commercially Acceptable

Tomer Shekel
Product Manager

Q. Would you say it's an important feature for the music playback to not be disturbed while you set up new groups?

A. In my opinion, if by setting a group, you'll now be stopping the music a person played, **that would not be a great experience for the user**.

Google's Proposed NIA

HIGHLY CONFIDENTIAL—ATTORNEYS' EYES ONLY

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP
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2 charlesverhoeven@quinnemanuel.com
   Melissa Baily (Bar No. 237649)
3 melissabaily@quinnemanuel.com
   James Judah (Bar No. 257112)
4 jamesjudah@quinnemanuel.com
   Lindsay Cooper (Bar No. 287125)
5 lindsaycooper@quinnemanuel.com

Non-Infringing Alternative #3 - no overlapping groups

A non-infringing alternative is an implementation in which a speaker that is already a member of one group will be forced out of this (first) group when a user attempts to add the speaker to a new (second) group. In other words, with this non-infringing alternative, no speaker can be a member of more than one group at the same time.

NOT ACCEPTABLE

SONOS, INC.,

21
22   Defendant
23
24 **GOOGLE [ ] SUPPLEMENTAL OBJECTIONS AND RESPONSES TO**
    PLAINTIFF S[ ] FIRST SET OF FACT DISCOVERY INTERROGATORIES
    (NO. 18)
25
26   Pursuant to Rule 33 of the Federal Rules of Civil Procedure, Defendant Google LLC
    ("Google") hereby objects and responds to Plaintiff Sonos, Inc.'s ("Sonos") First Set of Fact
27
    Discovery Interrogatories to Defendant ("Interrogatories"). Google responds to these
28

TX0280, Page 1 of 17

Google 11/21/202 Resp. to Rog 18 at 10-12

PDX10.80

Mr. Shekel: Overlapping Groups Was Important

Tomer Shekel
Product Manager

Google

Q.   So turning back to slide 18 of Exhibit 1255, would it be a **poor user experience to limit speakers to just one group**?

A.   In -- in our -- in our approach, in the Google Cast approach, if we were to have only option that every speaker can only be part of one group, I -- I would think it's a – **it's a poor user experience, yes**.

Deposition of Tomer Shekel, 109:11-19

PDX10.81

Mr. Shekel: Google Product Manager

Tomer Shekel
Product Manager

Google

TX6612

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

3:20-cv-06754-WHA

Chrome Blog

The latest news from the Google Chrome team

Posted by Tomer Shekel, Product Manager and Patron of Loud Music

Even more to love about Chromecast Audio
Thursday, December 10, 2015

A couple of months ago we launched Chromecast Audio to provide an easy way to stream your favorite tunes from your phone, tablet, or laptop to your existing speakers. At $35, Chromecast Audio is an affordable way to connect your speakers via WiFi so you can stream tons of popular apps including Spotify, Pandora, and Google Play Music from anywhere in your home. Today we're starting to add two new features to the latest software update to elevate your listening experience.

Blast the same song in every room

Now you can easily fill every room in your home—bedroom, kitchen, living room, or wherever you have a Chromecast Audio connected—with synchronous music. Multi-room lets you group Chromecast Audio devices together so you can listen to the same song on multiple speakers.

PDX10.82

Google's Story Doesn't Hold Up

Kenneth MacKay

Google

Tomer Shekel

Google

Q. Was Mr. Shekel involved in the new design or any development of the old design for group technology?

A. Mr. Shekel was not involved in the new design and he didn't take part in in any implementation or design of the old design.

Q. Did you define any other aspects of how the Google Home should work?

A. I define how it participates in multigroup you know -- you know, in group playback as well.

Trial Transcript at 1263:13-17

Shekel Dep. Ter. at 27:13-16

PDX10.83

Google's Story Doesn't Hold Up
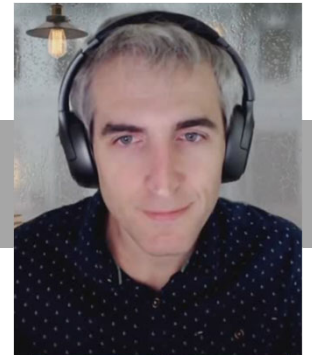
Kenneth MacKay

Google

Christopher Chan

Google

Q. Was Mr. Shekel involved in the new design or any development of the old design for group technology?
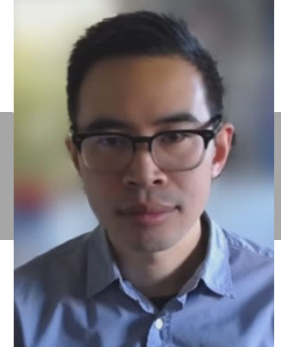
A. Mr. Shekel was not involved in the new design and he didn't take part in in any implementation or design of the old design.

Q. And who was your manager at that time? [2017]

A. Tomer Skekel was my first manager.

Q. And were you aware that Mr. Shekel in and around this time had participated in defining certain aspects of how the Google Home product worked?

A. Yes.

Trial Transcript at 1263:13-17

Trial Transcript at 1532:18-1533:1

PDX10.84

Google Timeline DDX7.2

2013-2014 Sonos/Google Collaboration

Nick Millington

Chief Innovation Officer

SONOS

Q. Is this an e-mail you sent to Mr. Yerga [Google] on May 15, 2013? … What was Mr. Yerga's response to your e-mail?

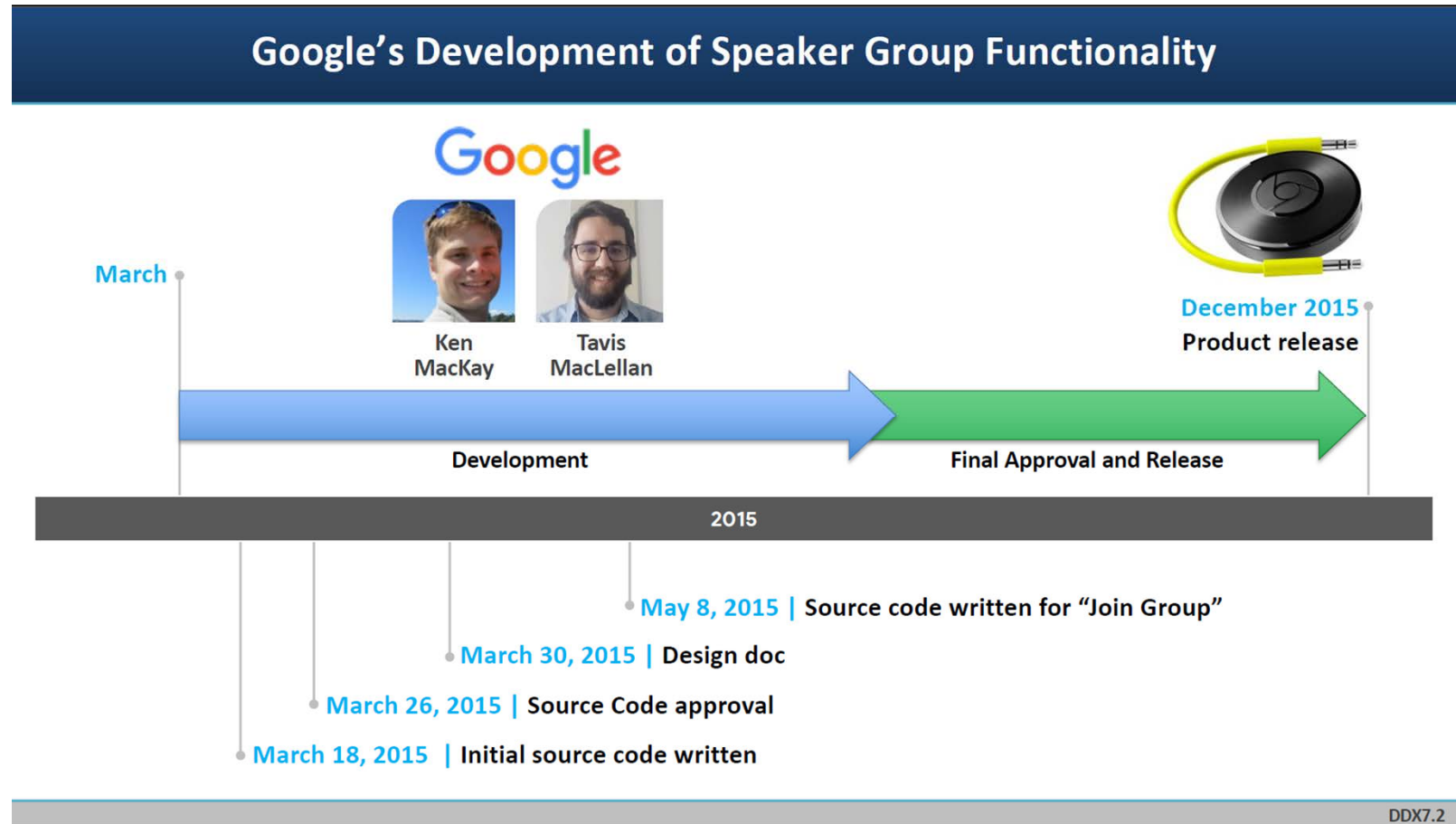A. … "I would love to see Sonos' integration as well. Off the record, we're talking about it internally now and I hope we can begin officially engaging on that front soon."

Q. Did **Sonos ever meet with Google's engineers**?

A. Yes, we did … **summer of 2013**.

TX0347

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

3:20-cv-06754-WHA

Trial Transcript, 301:2-302:9

PDX10.86

2013-2014 Sonos/Google Collaboration

Case 3:20-cv-06754-WHA   Document 171-19   Filed 03/18/22   Page 2 of 5

To: Kristen Bender[Kristen.Bender@sonos.com]
From: Ted Kartzman[teddyk@google.com]
Sent: Wed 7/10/2013 5:29:10 PM Eastern Standard Time
Subject: Re: Google/Sonos Meeting - Next Tuesday - Let's Catch Up To

That is great on all accounts, devices, lawyers, and meetings to
modify an NDA to make that happen. That's essentially the spir
We definitely want to get the Fling conversation moving along
we can today, and we'll be sure to get a next meeting set while

One change from my side, my boss is comfortable with me run

Let me know what the outcome is on the API ask, I want to make time to work through anything with you if your legal thinks we need an agreement before we
review the docs.

thanks KB

Jul 9, 2013 at 5:27 PM, Ted Kartzman <teddyk@google.com> wrote:

Meeting Agenda for July 16

11:30 AM – Introductions & overview
- Sonos team introductions & current roadmap
- Google Play team introductions & current roadmap
12 PM – Discuss "Smart Fling" and "Amoeba" (Sonos working codename)
- How do we make purchase behaviour better via Sonos?
- Sonos share roadmap for future
12:45 PM – Break For Lunch?
1:15 PM – Discuss SMAPI Integration w/ Google Play All Access
2 PM – High level business discussion and partnership next steps

TX0347, Page 2 of 5   SONOS-SVG2-00040230

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX0347

3:20-cv-06754-WHA

PDX10.87

2013-2014 Sonos/Google Collaboration

Nick Millington

Chief Innovation Officer

SONOS

Q.   **What** anything, if any, **did Sonos share with Google?**

A.   … One of them was **the actual physical hardware** that Sonos developed. So, for example, the **ZonePlayers and the controllers** were two things that we shared. Another thing that **we shared with them** was an **API that we call SMAPI**, which is the Sonos music API that was used for services like Google Play Music All Access to work with Sonos.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX0347

3:20-cv-06754-WHA

Trial Transcript, 304:11-305:11

PDX10.88

Google

To: Kristen Bender[Kristen.Bender@sonos.com]; Ron Kuper[Ron.Kuper@sonos.com]
Cc: Ted Kartzman[teddyk@google.com]; Paul Joyce[pauljoyce@google.com]
From: Debajit Ghosh[debajit@google.com]
Sent: Mon 8/5/2013 6:18:31 PM Eastern Daylight Time
Subject: incredible set up experience with Sonos

hi Kristen, Ron,

thank you so much for your kind offer to send us devices for testing -- that's been really helpful in spinning up for this integration. i wanted to pass along some feedback on my overall Sonos experience thus far. one word sums it up: wow!

it was literally 15-20m between when i started unboxing the devices you sent me to when i was listening to the music of my choice on multiple speakers. the packaging and instructions made the setup of the first component and every additional one a total breeze, and being able to play something immediately was quite powerful. i also set up my Pandora account for a richer experience overall with that as well. later, when i wanted a controller app on a different device, i just had to hit a single button combination on one of my mobile devices, and that device was immediately set up to control the rest.

the only feedback i had was on the Android app, which works well, but the one thing i missed was lock screen controls that publish what's currently playing to http://developer.android.com/reference/android... and if you grab "audio focus" (http://developer.android.com/training/managing...) the lockscreen will automatically show what's playing for basic navigation control. having to grab audio focus when audio is playing remotely is a bit clunky (something to raise with the platform team; they're planning on improving remote playback scenarios. in the meantime, it's probably fine but don't hold on if someone else wants to grab audio focus) you a nice lock screen integration.

From: Debajit Ghosh[debajit@google.com]

and that's it. otherwise, ==i was really quite impressed by the out-of-the-box experience==, ==the sound quality==, and ==the ease with which i was able to group and ungroup devices.==

==you have built an incredible product.== ==i'm really looking forward to both of the deep integrations our companies are doing together.== i'm especially excited to kick up the formal effort on the SMAPI integration after i return from vacation (and i'm sure that parts of my brain will be thinking about the integration while on vacation as well =).

best, debajit

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TX0359
3:20-cv-06754-WHA

PDX10.89

Message

From: eureka-dogfood-discuss@google.com [eureka-dogfood-discuss@google.com]
on behalf of Matt Stuart [mattstuart@google.com]
Sent: 5/21/2015 12:39:23 AM
To: Tomer Shekel [shekelto@google.com]
CC: Steve Chen [stevech@google.com]; Chas Leichner [chas@google.com]; Charlie Ross [charlieross@google.com]; Peter
             Mateja [pmateja@google.com]; Jeromy Leugers [jleugers@google.com]; Florian Rohrweck
             [frohrweck@google.com]; Eureka Dogfood Discuss [eureka-dogfood-discuss@google.com]; Ken Mackay
             [kmackay@google.com]
Subject: Re: [eureka-team] Re: [Eureka Dogfood] "Cast enabled speakers".. need testers?

Google

On Wed, May 20, 2015 at 6:43 PM, Tomer Shekel <shekelto@google.com> wrote:
Yes.
That is planned and will be cross OEMs/Brands.
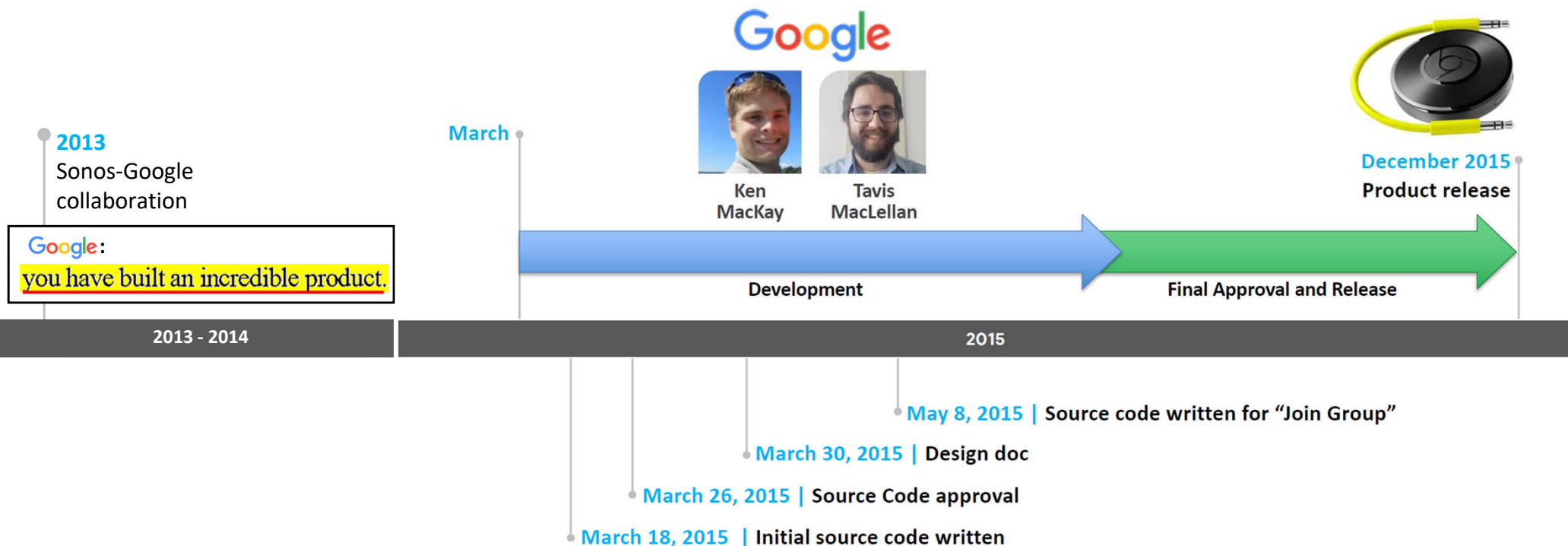
Tomer Shekel

On Wed, May 20, 2015 at 3:39 PM, Steve Chen <stevech@google.com> wrote:
Are there any plans to enable grouping cast enabled speakers together similar to what Sonos does to allow
multi-room playback? I also bought into the Sonos system and really enjoy that feature a great deal.

Tomer Shekel

On Wed, May 20, 2015 at 3:22 PM, Chas Leichner <chas@google.com> wrote:
Links are hard: https://grow.googleplex.com/opportunity/job/1292544945/

PDX10.90

Google's Development of Speaker Group Functionality

2013
Sonos-Google collaboration

Google:
you have built an incredible product.

2013 - 2014

Google

Ken MacKay

Tavis MacLellan

March

Development

2015

December 2015
Product release

Final Approval and Release

May 8, 2015 | Source code written for "Join Group"

March 30, 2015 | Design doc

March 26, 2015 | Source Code approval

March 18, 2015 | Initial source code written

DDX7.2

Missing from Google Timeline DDX7.2

Sonos's Feature Timeline

Jan. 27, 2005
Sonos releases
2005 system

Dec. 21, 2005
Mr. Lambourne's
conception date

SONOS

June 8, 2020
Sonos's introduction of
feature that practices
'885 and '966 patents

15-year Gap

| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |

Google's Opening Presentation at 17

PDX10.92

Misleading and Insufficient Data

Christopher Chan

Product Manager
for Google Nest

Q.   **From this data**, though, **you're not able to tell me how many Prince devices** from November 8 **are counted** in the November 9 row, are you?

A.   ... **not from the data alone.**

Log Date Usec	Product Model	Device Count	Connected Count	Proportion of daily connected in US
2022-11-10	prince	11674	339196	3.44%
2022-11-09	prince	11429	338491	3.38%
2022-11-08	prince	11211	337962	3.32%

UNITED STATES DISTRICT COURT
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TX0140

3:20-cv-06754-WHA

PDX10.93

Value is in the Capability

Christopher Chan

Product Manager
for Google Nest

PDX10.94

License Payments ≠ Reasonable Royalty

James Malackowski

Economist

OCEAN TOMO®

"**[I]f you go to lunch at the buffet and the buffet is $35, you can pick whatever you want from the buffet** . . . But if you go and say 'You know what? I'm just going to have the steak and I'll take -- you've got 30 entrees divided by $30. **Can I just pay a dollar on each steak**?' **No, you can't**. That's not the way the buffet works. And so this is a similar structure to that agreement."

License Payments ≠ Reasonable Royalty

License Payments

1 Year
Subscription

$0.58

per issue
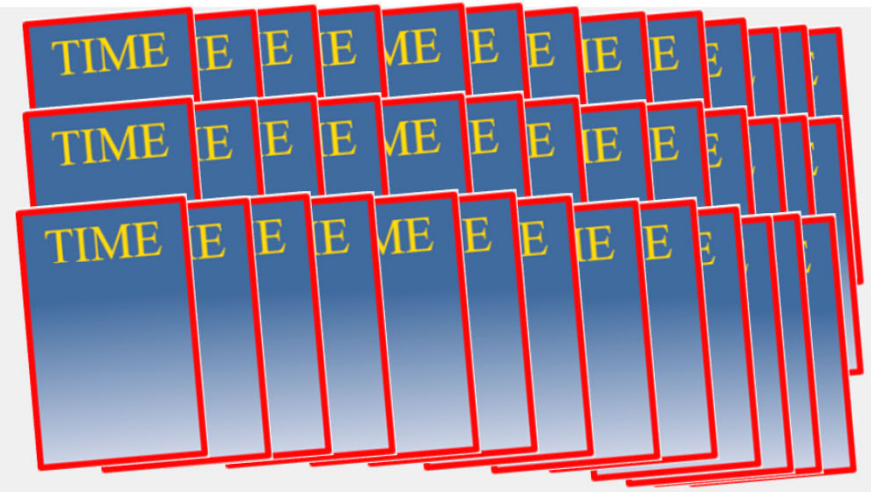
Reasonable Royalty

$4.99

per issue

Not Credible

Christopher Bakewell

Google

Christopher Bakewell

Google

At Trial:

"Google should only have to pay **Sonos $200K per patent** for infringement"
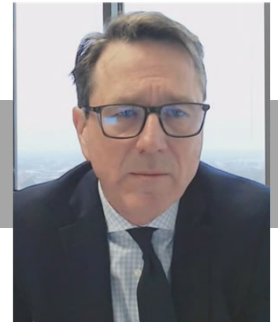
Charged Google **$1.4 Million** to reach his opinion that Sonos patents are only worth $200K each

Trial Transcript, XXX

PDX10.97

Google Was Aware of Sonos's Patents

- Patents

- Claim charts

- File history

- Source code

- Interviews with Google witnesses

- Expert analysis

- 87-page Sonos complaint

COMPLAINT FOR DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF U.S. PATENT NOS. 9,967,615; 10,779,033; 9,344,206; 10,469,966; AND 9,219,460

QUINN EMANUEL URQUHART & SULLIVAN, LLP

By ___/s/ Sean S. Pak___

Sean S. Pak
Attorneys for GOOGLE LLC

9/28/2020

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX8240

3:20-cv-06754-WHA

PDX10.98

Due Diligence
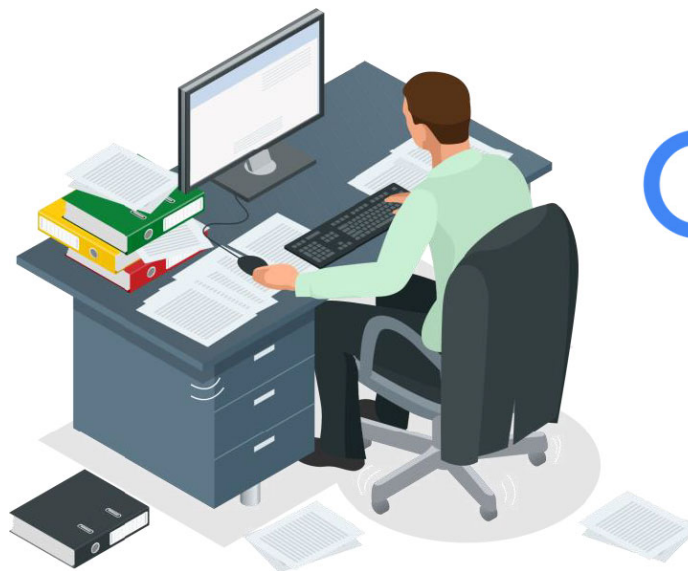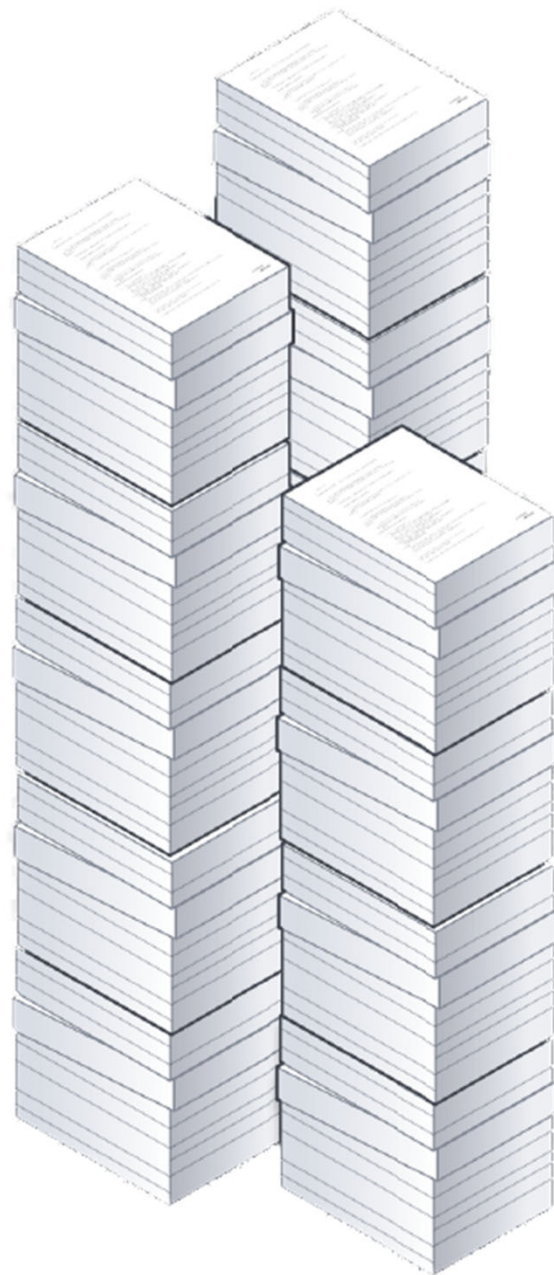
Google

Lawyers

Google Refused To Answer *When* It First Knew Of Patents

Tim Kowalski

Senior Counsel

Google

Q.   Has Google ever tracked Sonos's patents?

A.   **I don't think I have any non-privileged information that's responsive.**

Q.   Has Google ever done any searches for Sonos patents?

A.   **I don't think I have any non-privileged information that's responsive to that question.**

Q.   Has Google ever attempted to locate family members of Sonos patents?

A.   **Again, I don't have any non-privileged information to answer in response to that question.**

Q.   Did Google make an effort to learn when Sonos filed new patents?

A.   **I don't have non-privileged information responsive to that question.**

…

Kowalski Deposition at 65:9-17, 66:05-11, 66:13-19, 66:21-67:01

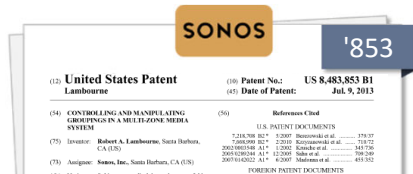PDX10.100

Ancestor Zone Scene Patents

Related U.S. Application Data

No. 14/465,457, filed on Aug. 21, 2014, now Pat. No. 9,344,206, which is a continuation of application No. 13/896,829, filed on May 17, 2013, now Pat. No. 8,843,228, which is a continuation of application No. 11/853,790, filed on Sep. 11, 2007, now Pat. No. 8,483,853.
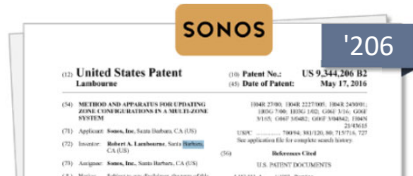
TX0001

PDX10.101

Ancestor Zone Scene Patents

SONOS '853
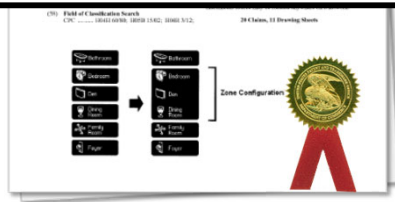
(12) **United States Patent**
Lambourne

(10) Patent No.:   US 8,483,853 B1
(45) Date of Patent: Jul. 9, 2013

(12) **United States Patent**
Lambourne

(10) **Patent No.:**   **US 8,483,853 B1**
(45) **Date of Patent:**   **Jul. 9, 2013**

SONOS '206

(12) **United States Patent**
Lambourne

(10) Patent No.:   US 9,344,206 B2
(45) Date of Patent: May 17, 2016

(12) **United States Patent**
Lambourne

(10) **Patent No.:**   **US 9,344,206 B2**
(45) **Date of Patent:**   **May 17, 2016**

PDX10.102

Key Dates

PDX10.103
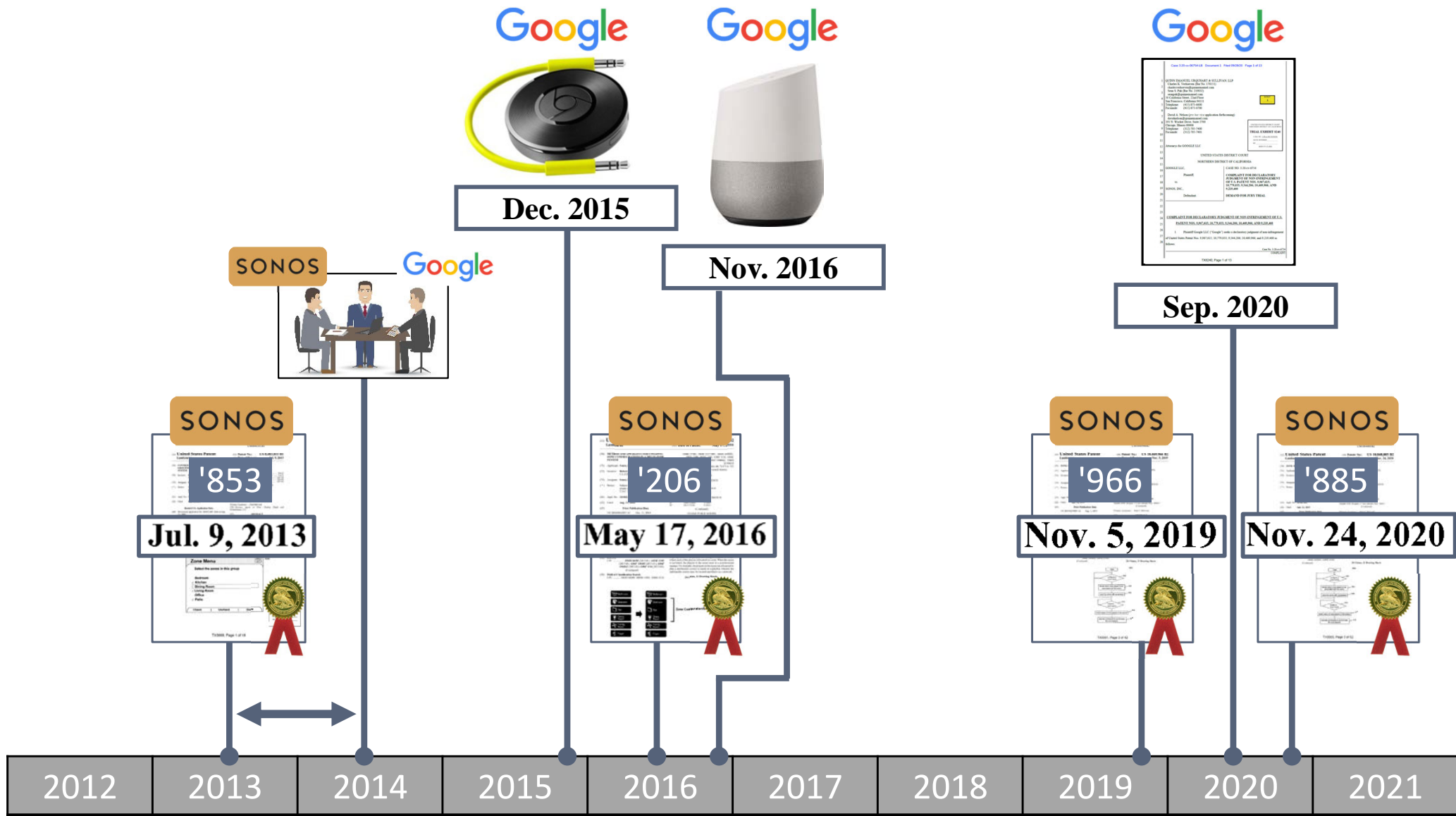
Rebuttal

Why Doesn't Google Just Remove It?

Google

Why hasn't Google removed **Zone Scenes** from its products?

PDX10.105

Google Has Always Had Zone Scenes

**Static Grouping/
Zone Scenes**

**Dynamic
Groups**

Static Groups are Useful

Kenneth MacKay
Senior Staff
Software Engineer

Google

Q. Do you recall then why you decided to implement it, in at least the initial version of the speaker group technology, the groups as static as opposed to dynamic groups?

A. As I recall, we were trying to be ==compatible with the existing Cast ecosystem==.

Q. What was it about static groups that at the time made them more compatible with the Cast ecosystem than dynamic groups?

A. It allowed the group to advertise itself over mDNS, or I guess the leader of the group to advertise the group over mDNS, as a -- as a Cast device, and ==existing sender apps would be able to use that as a Cast target==.

PDX10.107

Why Fight?

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP
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10

EXHIBIT 1

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TRIAL EXHIBIT 8240

CASE NO. 3:20-cv-06754-WHA
DATE ENTERED _____
BY _____
         DEPUTY CLERK

11
12 Attorneys for GOOGLE LLC
13
14   UNITED STATES DISTRICT COURT
15   NORTHERN DISTRICT OF CALIFORNIA
16 GOOGLE LLC,   CASE NO. 3:20-cv-6754
17   Plaintiff,   COMPLAINT FOR DECLARATORY
18   vs.   JUDGMENT OF NON-INFRINGEMENT
                                   OF U.S. PATENT NOS. 9,967,615;
19 SONOS, INC.,   10,779,033; 9,344,206; 10,469,966; AND
                                   9,219,460
20   Defendant.   **DEMAND FOR JURY TRIAL**
21
22
23
24 COMPLAINT FOR DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF U.S.
25   PATENT NOS. 9,967,615; 10,779,033; 9,344,206; 10,469,966; AND 9,219,460
26   1.   Plaintiff Google LLC ("Google") seeks a declaratory judgment of non-infringement
27 of United States Patent Nos. 9,967,615; 10,779,033; 9,344,206; 10,469,966; and 9,219,460 as
28 follows:
                                                   Case No. 3:20-cv-6754
                                                   COMPLAINT

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COMPLAINT FOR DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF U.S. PATENT NOS. 9,967,615; 10,779,033; 9,344,206; 10,469,966; AND 9,219,460

QUINN EMANUEL URQUHART & SULLIVAN, LLP

By ____/s/ Sean S. Pak____
   Sean S. Pak
   Attorneys for GOOGLE LLC

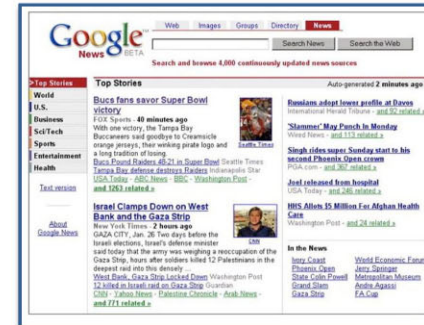UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TX8240

3:20-cv-06754-WHA

PDX10.108
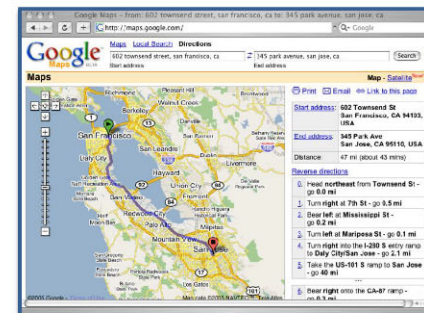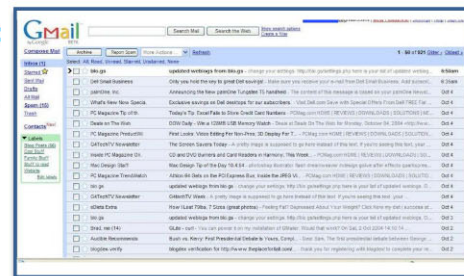
Google is a Verb

Dictionary

Definitions from Oxford Languages · Learn more

goo·gle

verb

search for information about (someone or something) on the internet using the search engine Google.
"I recently googled my 7th grade teacher and found his current email address"

PDX10.110

Sonos Innovation

Nick Millington
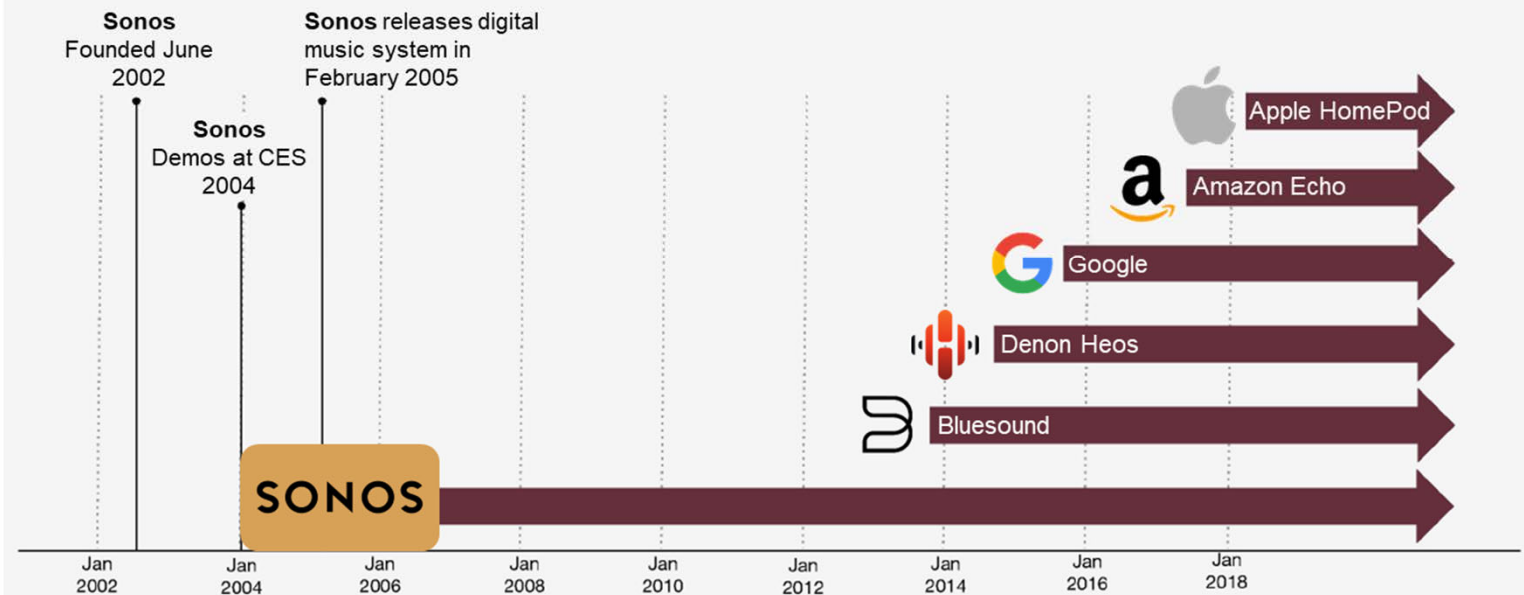
Chief Innovation Officer

SONOS

Sonos Innovation Widely Adopted

PDX10.112

Sonos Values Households

Alaina Kwasizur

General Counsel

Lifetime Value & Household Acquisition Cost

Today:

2.9 Products per Household

$270

LTV / HAC: ~2X

Potential as customers mature & we deliver on our roadmap:

4-6 Products per Household

~$400 to ~$600

Implied LTV / HAC: ~3X to 4X

SONOS-SVG2-00236935

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Powerful Business Model:
Our System Expands,
Start with One and Buy More

2.9
Products across all HH

39%
Own 1 Product

61%
Own 4.1 Products on Average

SONOS-SVG2-00236979

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PDX10.113

End